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ORIGINAL ARTICLES

APHASIA.

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PEORIA.

There are in the cortex of the cerebrum various more or less well-defined areas, known as centers, some of which are sensory, others motor. These centers are connected together by innumerable fibers, called association fibers. They are also correlated by means of appropriate conduction fibers, with the peripheral sense organs on the one hand and with the voluntary muscular system on the other. Sensations coming from objects in the outer world are transmitted by the sense organs, projected on the sensory centers, and taken cognizance of in higher or association centers as percepts and ideas of those objects. The doctrine which teaches that manifestations in peripheral organs are centralized in cortical areas is known as the doctrine of cerebral localization of function. It is a generalization not alone suggestive to the psychologist who seeks to discover the unity of body and mind; but it is an induction of inestimable value to the practicing physician whose endeavor it is to make deductions of the location and extent of cortical disease from correlative bodily symptoms. So far as we at present know, localizing symptoms are derived only from affections of the sensory, motor and speech centers, together with the tracts that associate them together, and connect them with the periphery of the body. Of all localizing symptoms, none are more significant, because none are more striking, none more definitive, than are those constituting the various defects in speech. Indeed, it was by a study of speech and its defects that investigators, early in the preceding century, were first led to see the relation existing between function and center. In 1825, Boullaud of France thought that the faculty of language might be localized in the frontal lobes of the brain. In 1836, Marc Dax still further limited the faculty to the frontal part of the left hemisphere. Dax's monograph of that year was entitled "Lesions of the Left Half of the Brain, Coinciding with Loss of Memory of the Signs of Thought." But Broca, in 1861, conceived the idea, from his clinical studies and sup-

plemental autopsies, that the memory necessary for the utterance of words has for its substratum a circumscribed area in the posterior part of the third left frontal convolution, in right-handed persons. The conception of a center in the cortex for the localization of the memory of words heard in spoken language is due to the investigations of Wernicke and Mynert, the results of whose studies were published in 1874. The study of speech, thus commenced, was continued by Lichtheim, Kussmaul, Bastian, Mills, Starr and many others. These investigators have conclusively shown that the cerebral cortex contains areas which preside over the memories for the different processes of speech, and that if these areas become diseased, in part or in whole, the processes of speech over which they preside are crippled or wholly lost. In other words, the patient will forget how to talk as surely as though he had never learned the difficult art of speech.

Pathologic investigations, then, have shown that there are centers, some of which control uttered speech; others language which is received. For words may be either spoken or written; they may be either heard or seen. One of these centers for the control of speech is Broca's, situated in the posterior part of the third frontal convolution. Here is localized the memory for the effort needed to pronounce a word. In dealing with speech, let it be understood that we are dealing, first of all, with memory processes. If this center be destroyed, the kinesthetic memory for pronouncing a word is effaced, and the patient can not call to mind the feeling of the proper movements necessary for articulate speech. He may retain his mental faculties, for he can comprehend words; his vocal cords are not paralyzed, for he can make sounds and sing; but the memory for the feeling which guides the play of his delicate muscles of articulation is gone, and he is speechless, speechless but not wordless. Though he may receive language, he is utterly incapable, save by gestures, of giving it out.

Another center which presides over speech is situated in the first temporal convolution. Here are registered the memories for the meaning of words which are heard in spoken language. Words are associated in our minds with ideas and concepts, and so we understand their meaning. But if the center which controls the memory for the sound of words is destroyed by some pathologic process, though the patient hears the word, yet he is incapable of reviving its memory. It is as though he hears it for the first time. An unfamiliar foreign language would have just as much significance for such a person as does his mother tongue. To illustrate, if one is not familiar with the German word "Glocke," it signifies nothing to him, but when he knows that "Glocke" means "bell" he at once recalls something that has been familiar to him since childhood. In imagination he sees and, above all, hears a bell. It may be some particular bell. He has associated the word with the object and its sound so long that now when the one is uttered he has no difficulty in reviving the memory of the others. Indeed, one is a natural sequence of the others. Perhaps the word "bell" recalls other words associated in memory with it, and he is reminded of Poe's poem of "The Bells." The person who has lost his auditory memories for words, however, may hear

the spoken word, but he can not associate the idea of the word as just heard with ideas of words previously heard, and he is in the same predicament as one listening for the first time to a word, say, in the Hottentot language. He may make his wants known in spontaneous speech, and he may be able to read and write, though not always. This auditory memory is the first of the speech memories to be developed, both genetically and phylogenetically—for the child learns to understand words long before it can speak them; and certain of the lower animals, as the dog, may have a limited vocabulary for heard words—it is the memory which is the most persistent throughout life, and the one which, when destroyed, causes the most serious disturbance in speech generally.

The two centers thus described have been, to a certainty, localized; there are two others, however, the location of which have been surmised, but not definitely established. As we not only speak words and hear words, but also see words and write words, so, hypothetically, there should be a center for the memory for the appearance of the word on the written or printed page, and a center for the memory for the movements necessary to write a word. Hence some have postulated centers in the cortex for these memories. There have been cases of people who have become unable to read written or printed language intelligently, and who at autopsy presented a lesion in the angular gyrus. It is probable, however, that the real cause of the disability in these cases was a lesion of the associated fibers connecting the centers for sight in the occipital lobes with the auditory speech center in the first temporal convolution, and that there is no distinct center which takes cognizance of written or printed symbols. Likewise, a center to control the memory for the movements concerned in writing a word does not appear to exist, according to most neurologists. Some, however, have localized it in the posterior part of the second frontal convolution, and some think that it is identical with Broca's center. In those people who use their motor memories when they write, as many do, for they have to pronounce the word to themselves before they can write it, a lesion destroying their memory for pronouncing a word will also destroy their memory for writing it. Hence, we find in practice that these two memories are generally destroyed together.

Such, then, are the centers which serve in a way that man has never been able to comprehend, for no one can tell the boundary between mind and matter, as the physical substrata for the memories of speech. But centers alone are not an adequate central mechanism for intelligent speech. The centers must be brought into connection with each other and with higher, or concept, centers before the mechanism is complete. For we can repeat what we hear, copy what we see, read what we have just written, and take cognizance of it all. Hence, anatomy tells us what psychology has postulated, that the different centers in heterogeneous parts of the cortex are connected together by fibers. These fibers in the aggregate constitute the centrum ovale or the white matter of the brain. They are the association fibers, the physical basis for the association of ideas. Connecting the two halves of the brain and constituting the corpus callosum are the commisural fibers, which serve to correlate the

processes going on in the two hemispheres. If there be a break in the continuity of any set of fibers connecting the different speech centers together, the faculty of language becomes deranged just as certainly as though the centers themselves were destroyed. For instance, if there be a lesion in the island of Reil, there will occur a disruption in the fibers connecting the auditory speech center with the motor speech center, and the patient will be unable to co-ordinate the memories of these two centers. He may understand the meaning of a word, for his auditory center is intact, and he can speak words in a certain automatic way, for his motor center is intact; but he can not pronounce after another words which he has just heard.

It is a curious fact, and one that can not be adequately explained, that in right-handed persons these speech centers and their associations are localized in the cortex of the left hemisphere; while in people who are left handed they become established in the right brain. That they have become so localized and established is a fact which seems to point out a relation between speech and voluntary action. Let us assume, then, that most of our voluntary acts, as social beings, are intimately associated with expression of thought, be it exhibited by gesture or by articulate speech. As every action, in some degree, is an index to our states of feeling and willing within, so that side of the brain that is best fitted, by size and development, for the control of the expression of these states, through voluntary action, would be the one which most readily develops centers and associations for speech. For when the child first attempts to make known its wants by a lisping word, and supplements that effort by a motion of its right hand, it is carving in its left cortex the associations between the processes which control voluntary movement, and the processes which control expression of its wants by gesture or by articulation. This seems to me to be a sufficient explanation for the association of the speech processes and the right-handed processes in the left cortex of the brain. That the child is originally right-handed and left-brained is a question which does not so much concern us here. If one were to philosophise, it might be observed that, given any two natural objects such as the hemispheres of the brain, it is quite unreasonable to suppose that they ever could be exactly the same in size and weight. This original inequality, producing, let us say, a left-brained and right-handed condition of the race, would then be propagated by heredity and custom. We are, therefore, right-handed and left-brained by fortuity. But, after all, the best solution of the problem which has puzzled philosophers in all times is that we are made that way.

Normal speech is made up essentially of three processes: sensory, motor and associational processes. In other words, language is received, interpreted and uttered. The normal individual receives speech ordinarily through his senses of sight and hearing. The blind and deaf, like Laura Bridgeman and Helen Keller, get intelligence from the outer world only through their tactile and muscular senses. Sensations are the elements of all mental processes. Sensations received through the sense organs are united to form a percept, it may be a percept of an object or of its representative word. If the object which stimulates the perception

is removed from the cognizance of the sense organs, its memory-picture remains more or less clearly in the mind, as an idea. The idea of the object is associated with the idea of the word and forms a concept. When the word is heard or seen or felt, the idea which it represents is called to mind. Words, then, symbolize ideas. They are the pegs on which thought is hung. No one can engage in any form of protracted thinking without the use of words to crystallize and fix the terms of his syllogism. Nothing is really one's own unless he can tell it. Speech, like other operations of the nervous system, such as reflex and voluntary action, consists in this threefold process: sensation, association and motion.

In its receptive, interpretive and uttering attributes, speech is an intricate procedure, one which is partly physical and partly intellectual. This intricacy is increased by certain deviations from the common standard in the individual. Individuals present three different memory types, which apply as well for words as for ideas. It was Charcot who first applied these memory types to the verbal memory. There is, first, the visualizer, the person who interprets speech in terms of his visual memories. His memory for the words of a language is mainly a memory for the appearance of the printed or written page. The centers for this psychical act of visualization are in the occipital lobes of both hemispheres. The visualizer has no difficulty in learning by rote. Indeed, after the idea of the printed page is fixed in mind, he has simply to read off in his mind's eye the words as they appear in succession. He sees as distinctly as though the book were before him each word, phrase and sentence; the details of capitalization, punctuation and spacing; the bottom of one page and the top of another. On account of his clear image, the strong visualizer may even be able to repeat the poem he has learned, as well backward as forward. The visualizer has an apparent good command of language, language, however, that is not his own. It is clear that if the visual memory-pictures of the visualizer be destroyed almost his entire language is gone. Then, there is the person who uses his auditory-memory-pictures predominantly. To him the world is a world of sound. The one who is of the auditory type, in recalling a word, must think pre-eminently of its sound. One who has this memory strongly developed can easily repeat phrases and sentences that he has heard; indeed, his mind is stored with aphorisms and maxims, not read, but acquired through commerce with men. If through disease this type lose his memory for the sound of words, his vocabulary is irreparably curtailed. Still another person thinks of words in terms of his motor memory-pictures, so that in recalling a word he recalls the effort of its pronunciation. Now these different types of memory may be used independently or in various combinations by different individuals in the registering and recalling of words. It has been shown that nearly half of all individuals are of the auditory-motor type, about 20 per cent. of the visual-motor type, about 15 per cent. of the auditory type, and about 7 per cent. of the pure motor type. It stands to reason, therefore, that as one or the other of these forms of memory predominate in different individuals, loss of certain centers will cause a hardly noticeable disorder of speech with one, while with another a severe disturbance or a complete loss of language will be the result.

Another factor to take into account in accurately localizing disease of the cortex by means of disordered speech is this: when the faculty of speech is abrogated from one hemisphere, the other hemisphere is quite likely in more or less degree, and especially with children, to take up the lost function. So that when the patient is seen for the first time in an advanced stage of the disease he may, by that time, have gained some considerable power of speech, due entirely to functional compensation. Hence, in order to make a correct topical diagnosis, it is important to have studied the case from its beginning, so as to be able to make allowance for this functional compensation. There is yet another consideration which might at first sight seem theoretical, but which rests to a certain extent on observation of fact. As one acquires a larger and larger vocabulary of words, it is reasonable to suppose that his speech areas increase in size and cover a larger and larger portion of his cortex. Now a circumscribed tumor which might cause complete loss of speech in an ignoramus would produce only a trivial disorder, or a stumbling of syllables, in one who originally possessed the vocabulary of a Shakespeare. So it makes a difference in diagnosing the size and position of a lesion whether the patient's vocabulary is composed of a few hundred words or is made up of 15,000. All these factors, trivial though they seem, must be taken into account in a critical study, and correct interpretation of the manifold symptoms constituting defective speech.

Such, in short, is an account of the processes of normal speech. They are so complicated and so inextricably bound up with higher or ideational processes that when one is disturbed all suffer, and even the higher operations of the intellect may be distorted. It was held by Max Müller, the philologist, that thought can not take place without words. Whether this be true or not, it is quite certain that if a person should lose all his memory-pictures for words, so that he could neither read nor write, speak nor understand, he would be almost, if not quite, a dement. It has been well said that intelligent speech distinguishes man from the brutes. We have said that the basis of language is a series of memory-pictures of the sound of the word, of the effort necessary to pronounce it, of the appearance of the written or printed symbols, and of the effort needed to produce these symbols in writing. We have said, also, that these four different memory-pictures, which together give us the idea of a word, have for their substrata certain definite centers in the cortex, together with their association fibers. Further, these memory-pictures are joined to the memory-pictures which make up the concept. They are all so intimately connected that if one is lost all the others feel the effect, and a break in the mechanism leads to a defect in speech. This defective speech is called aphasia.

Corresponding with the sensory, motor and associational processes of normal speech there are three processes of abnormal speech. These are designated as sensory aphasia, motor aphasia and conduction aphasia. Sensory aphasia is a defective or lost receptive power of speech. It includes auditory aphasia, or word deafness, and visual aphasia, or a loss of the power to appreciate written symbols, figures and other conventional signs. The distinctive clinical feature of auditory aphasia is the inability of the patient to understand spoken language, though his sense

of hearing is good. As most people are strongly auditif, so when the center which is the basis for the memory for the sound of words is destroyed there is a considerable derangement also of voluntary speech. The patient can not think how words sound and so can not pronounce them. If in a patient with word deafness there is no accompanying word-blindness, he may be able to read, not only to himself, but to read aloud. In such a case the motor speech memory is aroused by way of the visual memories, without the intervention of the auditory memories. Such patients, too, may speak automatically those words which they have long been used to uttering without thought of how they sound. Sometimes auditory aphasia manifests itself in the utterance of words or syllables so mixed and jumbled up together as to be mere gibberish or jargon. Such a form of speech is known as paraphasia.

Connected with word deafness there is frequently an inability to understand the meaning of written or printed words, though the sense of sight is normal and the words are seen. Such an inability is called alexia. It is due to a lesion in the fibers connecting the auditory center in the first temporal convolution with the visual centers in the occipital lobes. The patient is then unable to write because his visualization is cut off and he can not remember how the words look. Alexia must not be confounded with mind-blindness, which is due to lesions in the visual centers themselves. A patient unable to comprehend written words may understand them if he trace them with his finger, his memory-pictures being awakened through his muscular sense. A patient with isolated alexia may be able to write, but it seems to him as though he were writing with his eyes closed, and, indeed, the writing has the appearance of having been done with closed eyes. Generally a person with alexia can not read what he had just written. Right hemianopsia frequently occurs with alexia.

Conduction aphasia is a form of aphasia caused by a break in the continuity of certain of the association fibers connecting the speech centers together. The symptoms vary according to the set of fibers severed. If those connecting the auditory and motor speech centers be disrupted, the patient can understand words and he can speak a few words spontaneously, but as the coördination between these two centers is destroyed he can not repeat after another what the other had just said. If he attempts to do so his speech is jargon. There are different degrees of this paraphasia. There may be simply a tendency for the wrong word to slip out now and then. A patient, speaking of pills, said that he had taken potatoes. Sometimes the patient can not recollect a certain word. He may then make use of a periphrasis to get around the difficulty, using the word "thing" to supply the missing word. Sometimes there is a stumbling of syllables (silbenstolpern of Kussmaul). Bastian mentions the case of a distinguished professor who was constantly making ludicrous blunders. He would say "cus porcuscles" for "pus corpuscles." Starr relates the history of a person who would say "five of telephone" for "four of spades." A patient of mine, after recovering from an attack of apoplexy, would say "flesurable" for "pleasurable," "beutriful" for "beautiful," etc., and sometimes he was unable to recall the word at all. Some-

times the patient makes use of actual words, but they are so collocated that his speech is unintelligible. In extreme forms there is a mere jabber of meaningless sounds. In rare cases the paraphasia is only transient. A senile patient of mine became suddenly paraphasiac, without any other symptom. He talked at great length in a gibberish composed of transposed syllables, wholly unintelligible. He seemed to think that he was talking sense and he could understand what was said to him. In a few days his speech was normal. Expressing ideas in words is such a familiar process and is so bound up with our other faculties that we do not realize its importance until the power of speech is thus deranged. And then it seems to us almost as though the patient were demented.

The following interesting case is a good illustration of paraphasia and paragraphia. Dr. Marcus Whiting, whose case it is, has kindly allowed me to study it. The patient is a woman, 66 years of age, teacher of vocal music, intelligent, right-handed. Two or three weeks ago, while playing at cards, she suddenly complained of "feeling so funny," became hemiplegic on the right side, and it was also noticed that she had lost the ability to properly express herself in words. She did not lose consciousness. The hemiplegia was slight and transient; the next morning she could walk, and the grip of the right hand equaled that of the left. The sight and hearing are good, there is no hemianopsia, she seems in good spirits and can sleep and eat well. There is no valvular disease of the heart, but its rhythm is disturbed. The main symptom complained of at the present time is her defect in speech, which is characterized by an unintelligible jumble or jargon of words when she attempts to make known her wants. At first sight one might take her to be demented, but upon closer examination one finds that she can understand the meaning of every word that is said to her, and she can associate words with their proper ideas. That she can comprehend the meaning of words shows that the center in the first left temporal convolution is intact. That she can talk in her peculiar way, and even utters a few spontaneous expressions to which she has long used, such as "Good morning," "Call again," etc., proves that she is not a motor aphasiac. The trouble is that she can not coördinate the idea of the word heard with the idea of the spoken word, and so she talks jargon. As to reading, she appears to enjoy the newspapers, but whether she really gets the import of what she reads is questionable. When commanded in writing to perform a certain act, as to take off her glasses, she seems to recognize the words, that is, can read them to herself, but she fails to comprehend their meaning. It is not until she hears the spoken command that she understands and obeys. She therefore has alexia. When she attempts to write she produces an unintelligible scrawl. She can not even write her name. She can copy with difficulty. In her case it is the lack of the memory of the appearance of a word that prevents her from writing with freedom. She can sing a familiar song correctly, the tune carrying with it a number of words. As before her attack she could play the piano, it will be interesting to note whether she can still do so when she gets up and around. She can draw whatever she is told to. She can repeat some words, but not all, after another person. Thus it may be seen that she has absolutely no way of making her wants known,

save by gestures and a few automatic expressions. She can receive spoken language, but can not communicate language. In this case the lesion would seem to be an embolus plugging the main branch of the left middle cerebral artery, and so cutting off the nutrition of not one particular word center, as would be the case if only one of its branches were occluded, but of the different centers and associations quite extensively. One might in passing call attention to the medicolegal aspect of such a case as this. The peculiarity of speech makes the patient appear insane. Indeed, cases of aphasia have been tried in the courts as to their testamentary capacity, etc. This woman could not affix her name to any legal document. But as her ideational processes are undisturbed she has what the lawyers call a disposing mind.*

The remaining form of abnormal speech is known as motor aphasia. When a lesion destroys Broca's center, although the vocal cords are not paralyzed and although the processes of thought are not interfered with, yet the patient has lost his ability to convey his ideas by means of spoken words. This condition is called aphemia. In such a case the faculty for reading may also be disturbed, the disturbance depending upon the extent to which the patient uses his motor processes to interpret visual symbols. With some visual symbols arouse ideas directly; extensive disease of the motor centers may not destroy their ability to read. With others visual symbols arouse ideas only by energizing their motor structures; such is the case with those uneducated people who move their lips when they read to themselves. With most motor aphasiacs the faculty for spontaneous writing is destroyed, even though the hand be not paralyzed—a condition known as agraphia. Wernicke thinks that writing is the act of tracing the visual word memories. Exner thinks that there is a center for writing in the second frontal convolutions adjoining the center for the hand. As agraphia occurs so frequently with motor aphasia, Broca and others have thought that the motor speech center might also control the memory for the movements necessary for writing. And this, on the whole, seems the most plausible conclusion. Motor aphasia is generally associated with right hemiplegia.

Some years ago I had under observation a patient presenting the following symptoms: He was 33 years of age, right-handed. For twenty years he had been in poor health, having suffered from palpitation of the heart. Two years previous to my examination of him he was suddenly seized with an attack in which he lost consciousness completely and remained unconscious for two weeks. When he regained his senses it was found that he could neither speak nor write, and that he was completely paralyzed on his right side. Since the attack he had epileptic fits, recurring about every two to three weeks. His mind, which had been impaired by the insult of the attack, had gradually improved till the time of the

* This woman can now, two months after the beginning of her attack, engage in fair conversation. One listening to her for the first time could not readily detect any aphasia. Now and then she must search for a word, and in her search she is helped by closing her eyes and recalling the appearance of the written or printed symbol. It was amusing on one occasion, when she wished to say the word "six" to see her turn around and look at the figure on the clock before she could pronounce the word. She can now write the letters of the alphabet, the numerals, and her name, but nothing more. She reads and understands almost everything, and can play the piano with freedom.

examination. I found a man of robust build, good nutrition and who irregular in rhythm, and there was a loud murmur. He was still hemi- felt pretty well, except after his fits of epilepsy. His heart, however, was plegic, but had gained the use of his leg to a certain extent, so that he could walk. The most distinctive feature of his case, however, was his aphasia. He could say no words except "yes" and "no," "Maggie" and "Walter," the names of his children, and "damn," which latter expression he used on all occasions. He could write nothing except his name, writing the surname and first two initials correctly, but spelling the given name "Edward" as "Edrard" or "Edrawd" or "Edrw." He could understand perfectly all that was said to him and could read, though reading was difficult work for him. He could understand gestures and could also make gestures in return. As, therefore, his receptive power of language was good and his uttering power gone, he had motor aphasia. Testing him further, it was found that he could recognize objects seen, heard, felt, tasted and smelled, therefore he had no apraxia or mind blindness. He could call to mind the idea for the name of an object. When I wrote the word "cat" he knew its meaning, and when asked what kind of a noise the cat makes he said, "Meow." He could remember events that occurred before his attack. He could play at dominoes and cards. If shown money he could tell how much. If commanded in writing to do something he could only read simple sentences. He could copy written words correctly, but could not copy written words from their printed symbols. He could not write letters. He could not name letters after tracing them with his fingers. He could write his age correctly. He could write the numerals up to 10. He could add simple sums, but could not subtract, multiply or divide. He could understand musical tunes and could whistle. In singing a song the tune carried along with it the memory of a few words. If told to draw the picture of a tree or the profile of a face he could do so. Later he could name the numerals to 10 and could name a few printed letters. He also learned a few words. His mental powers, however, gradually failed till the time of his death. This resulted from his heart affection about four years after his attack. His was a case of pure motor aphasia, caused by an embolus from the diseased heart. Although there was no autopsy allowed, I feel sure that the lesion in this case was a focus of softening in the posterior part of the third left frontal convolution.

Passing over the consideration of the etiology, prognosis, etc., of aphasia, let us consider now one aspect of its treatment. First of all, it should be noted that the cortical areas concerned in speech are very accessible to the technic of the surgeon, and he is often able to remove the subdural clot, or tumor, which by pressure is destroying the faculty of speech. After the cause which produces the disordered speech is removed, however, the main treatment should be one of systematic teaching. And here the physician may well turn pedagogue. I have long thought that the aphasiac should be taught to reacquire his lost art in much the same way as the child is taught at school, or maybe as the blind and deaf are taught in their proper institutions. Indeed, it might be a good plan to have schools in connection with sanitaria in which to reëducate patients suffering from

certain nervous diseases, such as aphasia in its various forms, hysteria, locomotor ataxia, epilepsy, idiocy even, etc. For nervous tissue is very receptive to impressions, and though the function of one center with its associations be destroyed, other centers and associations may possess a compensatory potentiality. If a speech center in the left hemisphere be destroyed, its analogue in the right hemisphere may be educated. The schools to which I refer should be in charge of those trained for the particular duties of educating people with missing faculties. They should know through what avenues and in what way to best reach the nervous matter whose function will supply that which is lost. Of course, the sensory aphasiac would be the one most difficult to instruct, because his inroads to knowledge are impaired. Indeed, he is in quite the same predicament as are the blind and deaf; the only difference is that instead of the eye and ear being impervious to perceptions, the eye and ear centers for words are incapable of receiving and registering their memory. Persons of this class might be helped to acquire a considerable power of speech through their tactile and muscular senses. It was in this way that Laura Bridgeman and Helen Keller acquired their symbolization of ideas. Certain aphasiacs might be taught the art of lip reading. To teach the aphasiac would not be such a difficult task as to teach the blind and deaf, because the former has certain memories to start with, the loss being for words, not for ideas; the latter have never had their memories aroused. In any case, however, where the speech centers are completely abrogated the process of reëducation is a tedious one. The patient learns to talk in much the same manner as does the child in learning its mother-tongue; indeed, the words are pronounced just as inarticulately. Still, if the aphasiac were intelligent and used to acquiring knowledge before his attack I believe that much might be done by this process of reëducation. Learning to use the left hand helps to develop and educate the right brain, and this the aphasiac should unremittingly attempt to do.

Defects in speech are important localizing symptoms, but they must be taken in conjunction with other localizing symptoms, as paralyses, spasms of groups of muscles, disturbances of sensation, etc., in order to definitely localize cortical and subcortical disease. Our knowledge of certain forms of aphasia is not, as yet, complete. As the organ of the mind is inaccessible to direct examination, its disorders can be investigated indirectly only, by means of the instrument of deduction; but deduction, with legitimate premises, is an efficient instrument. Before, however, we can make use of deduction in any particular case we must first have built up our general conclusions derived from a number of cases. Before the diagnosis must come the specific law of causation obtained from observation and analysis of particular instances. Careful clinical studies, then, must be supplemented by appropriate autopsies. This process of generalization, in the case of speech, is a tedious one, because Nature does not make experiments with speech every day. But it is the only method which allows of the diagnosis of cortical disease from peripheral symptoms, the only method by which the complicated interrelations of the manifold processes of defective speech can be unraveled and understood.

CONSIDERATIONS ON NEURASTHENIA.*

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Despite the fact that neurasthenia, clinically, is one of the best known subjects in medicine, many general practitioners have but hazy notions regarding its clinical manifestations. Just as every obscure nervous condition in a woman was formerly called hysteria, so now every unclassified mental or nervous disease is called neurasthenia if the patient is a man. The statement can not be reiterated often enough that neurasthenia may occur in man, woman or child. It is a well-defined diseased condition and not difficult of recognition if the essential symptoms are once thoroughly grasped. Contrary to the opinion of some who pose as specialists in the public press, I will state that there is nothing modern or American about the disease except the name, which was given it by an American in modern times. Clifford Albutt well says that neurasthenia, in common with insanity and epilepsy, undoubtedly existed in all ages, but, unlike the sufferers from the two latter diseases, which had somewhat of a sacred character and thus enjoyed a certain protection, neurasthenic persons were harshly thrust aside and escaped even medical recognition. Each day convinces me that neurasthenia can not lay claim to being a fashionable disease; it is found in the palace and in the hovel, among the intellectual and among the ignorant; it affects equally the indolent and the overworked.

At the outset permit me to state that I have peculiar notions of what constitutes neurasthenia. I will begin by eliminating certain diseased conditions which, in my opinion, do not belong to neurasthenia, though they may produce symptoms resembling those of neurasthenia. It is well known that phthisis, chlorosis, anemia, toxemias due to infections or metallic poisoning, drug habits, etc., produce among other symptoms such as might easily be confounded with those of neurasthenia. Further, it would be marvelous if an organic nervous disease which weakens the entire organism should fail to produce nervous debility. This, however, is not neurasthenia, but merely symptomatic of some other underlying condition. In this connection I recall the case of an old lady who consulted me for numerous neurasthenic symptoms, which were found upon a routine examination to be the expression of tabes dorsalis, the existence of which her former attendants failed to recognize. Instances are numerous in which neurasthenia is made to cover a multitude of sins, apart from the fashionable interchange of the term neurasthenia for hysteria, because the latter smacks of simulation and "maladie imaginaire." Then there is a class of so-called neurasthenics who are really sufferers from some pelvic disease which remains unrecognized. These I would also exclude from the category of true neurasthenia. Pelvic disease may undoubtedly mimic true neurasthenia. There is pain referred to the back, hips and thighs, together with more or less marked impair-

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ment of general health. But these symptoms are characteristic of pelvic disease and do not constitute neurasthenia. While until recently the gynecologists, with their minds centered on the abdominal brain, considered every owner of a uterus and adnexa the legitimate subject for castration, provided there was any ache anywhere in the body, the pendulum has now swung to the opposite extreme, and sometimes genuine pelvic disease is mistaken for hysteria or neurasthenia.

I would also separate from simple neurasthenia the conditions resulting from disordered metabolism and the effects upon the nervous system of cardiovascular changes, notably arteriosclerosis. These varieties might be called neurasthenia symptomatica. Under no circumstances ought we to include under neurasthenia the various forms of hereditary neuropathy that evenuate in well-defined neurosis or psychosis and those conditions which are already rudimentary psychoses and neuroses, but can not be put into a classified type. These forms of nervous disease have only a superficial resemblance to true neurasthenia, and I can not agree with those who describe them as constitutional or congenital neurasthenia. And, lastly, we hear of patients who have passed from neurasthenia into hypochondria or melancholia. As a matter of fact, neurasthenia never eventuates in mental disease. All the preceding nervous conditions are properly called neurasthenoid states, as Dercum suggests. They are not neurasthenia proper and should not be classed with it.

Symptomatology.—Neurasthenia is essentially a condition of chronic fatigue. We are all familiar with acute fatigue coming on after overwork, either mental or physical, when the muscles feel as though they were bruised and beaten, when appetite is gone and a slight noise sounds like thunder, when the letters dance on the printed page, when our child's company is distasteful and when even sleep becomes fitful, accompanied by sudden starts and jumps or dreadful dreams. Imagine such a state to become continuous and you have a fair description of neurasthenia. The neurasthenic is always tired, lacks energy, is irritable and has the multitudinous local and general aches of chronic fatigue. Circulatory and gastrointestinal derangements characteristic of impaired nervous energy are usual complaints. These are the symptoms of fatigue and may be called primary as opposed to another set of symptoms, the so-called secondary symptoms, such as dizziness, throbbing in the head or tremblings in limbs, ringing in ears and various other strange sensations.

Most of the symptoms of neurasthenia are expressions of weakness and irritability. Unlike hysteria, there is never a minus, such as paralysis, or a plus, such as convulsions for the motor tracts, nor is there a minus, such as anesthesia, nor a plus, such as hyperesthesia for the sensory sphere, but there is perversion or reduction of power and sensation. This myasthenia is usually pronounced, as can be tested by the grip of the hand; walking tires the patient readily. The weakness, however, is general. Should there appear decided local weakness, we have to deal with either organic disease, hysteria or an occupation neurosis. Muscular tremor is often seen, which is either general or limited to the hands or the orbicularis palpebrarum. The weakness is considered a primary symptom, while the tremor and twitchings are classed among the secondary or adventitious

signs. When the patellar tendon is struck we usually find a ready and exaggerated response, but this weakens considerably after it has been struck a few times in succession, showing irritability and weakness.

In the sensory sphere the patient has a peculiar feeling of general fatigue, as though his muscles had been bruised and flogged. A sense of lightness or constriction about the head, giddiness and vertigo made worse by postural change, are often mentioned. The multitude of pains described by the patient prove on close inquiry to be no pains at all, but merely uncomfortable sensations, paresthesias. Among these may be reckoned the various sensations in the head, the so-called headaches of neurasthenia. The patient describes the headache as either a fullness or a feeling of emptiness in the head, or he feels as though his brain is about to explode or be crushed. The lead-cap sensation passing around the base of the brain is a common form of paresthesia. Similarly, patients complain of backache and limbache, which are mostly dull in character and diffuse in location; of paresthesias, such as needles and pins, tingling and numbness in fingers and toes. The oft-mentioned spinal tenderness consists in the patient experiencing pain over the spinous processes, either spontaneously or after passing the finger lightly over the spine.

The special senses are prone to develop fatigue symptoms. The patient states that after reading for a few minutes the letters appear blurred, or ordinary objects may appear excessively large or very small. The auditory apparatus in some cases participates in the general fatigue; there may be tinnitus or hypersensitiveness to sounds or even reduction of hearing.

Psychic disturbances are rarely absent in cases of neurasthenia. The patient shows lack of concentration and incapacity for sustained mental effort. There is marked reduction of spontaneity of thought, lack of confidence and indecision. Introspection or the looking within for new hypochondriacal symptoms and hypochondriacal ideas may be very obstinate accompaniments. The psychic condition is probably only a result of somatic processes. The brain, receiving impressions from all parts of the body of fatigue, flaccidity or retardation of function, reacts with sensation of fear, sadness, worry, indecision, indolence, apathy. There may be a vague sense of fear or there may be regular attacks of fear, during which the patient becomes pale, is bathed with perspiration, pants for breath and sinks exhausted into a chair. Certain special fears are also noted in this disease, such as the fear of open spaces, agoraphobia; the fear of closed places, claustrophobia; the fear of being alone, monophobia; the fear of crowds, anthrophobia. The special fears more properly belong to the neurasthenoid states, as patients affected by them are in reality neuropaths.

Sleep disorders are common in neurasthenia. Patients may experience peculiar sensations just before falling asleep, or they may be awakened from their sleep by a feeling of oppression in the chest, palpitation of the heart, general tremblings and fear; or, having slept fairly well, they awaken with a feeling of helplessness; they are unable to open the eyes or move a limb until after a few minutes, when power gradually returns. Distressing dreams, a feeling of weight on the chest, are found among neurasthenics as well as among other nervous patients. Insomnia, partial or complete, is a frequent complaint. A patient may readily fall asleep.

but wakes after two or three hours and tosses in bed till morning without having found the great restorer.

The visceral disturbances commonly found in neurasthenia are also phenomena indicative of chronic fatigue. The digestive disturbances are primarily those of weakness of motility and secretion, which cause delayed digestion and may even be complicated by a gastric catarrh. A marked deficiency of hydrochloric acid, the so-called achlorhydria, is not rarely seen in neurasthenia. This finding, recently observed in a member of my family, has caused me not a little anxiety; the possibility of gastric carcinoma was seriously entertained by myself and a very eminent internist, until a course of treatment for neurasthenia eventuated in recovery and incidentally made the diagnosis. Such patients suffer from anorexia, emaciate rapidly and may suffer gastric pain, and if in addition an absence of HCl and dilated stomach be found we are contemplating the picture of carcinoma. Only repeated and careful observation of symptoms can enable one to make a correct differential diagnosis. Instead of achlorhydria we may have the troublesome condition of hyperchlorhydria and so-called dyspepsia nervosa.

The circulatory apparatus in neurasthenia shows the same irritable weakness observed in other organs. The force, rhythm, character and frequency of the pulse may be changed. Palpitation of the heart or persistent tachycardia may become troublesome. Coldness of the extremities and sometimes lividity is observed. Aortic pulsation, powerful enough to be mistaken for aneurism, is not rare. The vasomotor apparatus betrays its weakness in local pallor and frequent flushings from insufficient causes. The glandular organs may show perversion of function in the form of sweats, polyuria, hyper- or hypo-secretion of gastric juice, mucous discharges from rectum or, what is an almost constant symptom in neurasthenia, constipation.

In certain individuals weakness and irritability in the sexual sphere may be so pronounced as to overshadow all other symptoms of the disease and the name sexual neurasthenia has been applied to this condition. In such patients there is either sexual hyperesthesia or dysesthesia. The loss of desire for normal intercourse leads to the fear of impotence, the so-called psychic impotence. It is in these cases with weakened normal psychic processes that new and abnormal sexual thoughts, the so-called perverse sexual feelings, struggle for recognition. And because they are not connected with the usual distaste for normal intercourse, onanism, Masochism, fetichism, exhibitionism and other perversities are occasionally practiced by the sexual neurasthenic. In justice to the sufferer from neurasthenia it must be stated that the true sexual pervert is not of his class, but a born psychopath. The most troublesome complaint of the sexual neurasthenic is sexual weakness and irritability; there are frequent seminal losses, premature ejaculation and great exhaustion following coitus.

What causes neurasthenia? In general terms we may state that overwork and nervous overstrain, worry, sexual excesses and abuse of stimulants are productive of neurasthenic states. It is not probable that a naturally strong organism will break down under slight stress. The ex-

citing causes must operate very strongly in order to produce such a result. On the other hand there are constitutions endowed with small powers of resistance, in whom insignificant causes suffice to produce nervous breakdowns. The last class is usually the offspring of parents weakened by disease, such as tuberculosis, syphilis, gout or neurasthenia. Distinct neuropathy and psychopathy are but rarely found in the ancestry of neurasthenic patients, while these are common in the ancestry of those affected with insanity, hysteria and the neurasthenoid states. It is a fact, with but few exceptions, that work alone does not cause neurasthenia, but it is the worry that often goes with it. The successful man in business, politics or finance seldom becomes a prey to neurasthenia, but it is the man who has staked his all on a venture and lost, or the man who has suddenly taken on the habits of the elite after having spent years of usefulness in a lower station of life who is apt to land in a sanatorium for nervous invalids.

Pathogenesis.—I intend to regale you with pure theory regarding the pathology of the great fatigue neurosis. Although we have no pathologic anatomy of neurasthenia, yet we have certain notions on the subject gained from animal experimentation and from speculative reasoning. The experiments of Hodge, who caused fatigue in various animals and then examined their nerve cells with the modern methods of staining, have now become famous and lead us to infer similar findings in the cells of neurasthenics. As the true nature of neurasthenia is still a matter of speculation, I might be permitted to quote the following pretty explanation of neuronic activity and exhaustion taken from Dr. H. H. Hoppe's article on hysteric stigmata in the February *Journal of Nervous and Mental Diseases:* "We know that the neurone reacts to external stimuli in two ways, which are opposed to each other. In the first place, stimulation of a neurone produces external manifestations of neuronic activity, which show themselves in muscular contraction, heat production, secretion, etc. In the second place, stimulation affects the neurone in such a way as to limit or curtail the energy produced. These effects are respectively known as the conducting and the inhibitory activity. Both of these activities are dependent upon definite biochemical and biomechanical activity. Verworn holds that the protoplasm of the ganglionic cell consists of numerous living molecules of albumin, which are constantly performing either positive or negative molecular work and sometimes one and sometimes the other predominates. The positive molecular activity manifests itself in an oxidation process, viz., the using up of the protoplasmic molecules in the production of the specific impulse of the cell. The negative molecular action is one of assimilation, a synthetic process, namely, the building up of the complex chemical molecules of the neurone.

"Fatigue and exhaustion result from an excessive positive molecular activity, recuperation from an excess of negative molecular activity. Usually a neurone is at the same time under the influence of both stimuli. Its activity shows itself either in the nature of urging on or increasing an impulse which is already generated, or in diminishing the force of such an impulse. The collision of two impulses in the same

neurone is called "the interference of the stimuli." The circumstances which determine the result of such an interference, whether there shall be an increase or a diminution of activity, depends upon the condition of the neurone. In a normal condition of the neurone the result of such an interference is usually inhibition; in an exhausted neurone there is usually an increase of irritability or activity. The manifestations of a normal neuronic activity are always, therefore, somewhat inhibited.

"Abnormal neuronic activity may either show itself in the form of an explosion or its activity may be entirely absent, due either to a complete exhaustion caused by a want of working capacity, or it may result from complete inhibition due to the excessive manifestation of the 'interference of stimuli.' Wundt says that in every central neurone we must distinguish physiologically between a central zone and a peripheral zone of the cell. The central zone (nucleus) is the seat of negative molecular activity, viz., anabolism, and the peripheral zone is the seat of positive molecular activity, viz., katabolism. Any stimulus reaching the central zone increases the negative molecular activity, which is inhibitory in character, and causes this activity to overflow the peripheral zone; and, *vice versa*, any stimulus acting upon the periphery of the zone increases positive molecular activity, which produces increased activity and causes it to spread over the central zone."

Though the foregoing theory itself needs explanation, yet it seems to explain our usual treatment of neurasthenia in a most plausible manner.

Treatment.—As regards prophylaxis, we should endeavor to live with reason, to avoid excitement, worry and overwork; especially should we exercise good judgment in the selection of a vocation for one with a tendency to neurasthenia. The marriage of two neurasthenics is almost sure to result in a multiplication of neurasthenia; such marriages should, therefore, be frowned upon. We are very careful in the breeding of animals and progeny is a vital question with us, but we never have a care in the breeding of the human animal and go on producing an inferior race. Consanguineous marriages should be discouraged, and sexual excesses, both intra- and extra-marital, should be strictly interdicted. The therapy for the developed disease will aim at searching out the various causes that may have contributed toward the production of the condition with the view of preventing further recurrence. Mental or physical labor must be limited to a minimum, even if a change of occupation should become necessary. The proper proportions between work and play should be strictly maintained. Starting from the assumption that the nerve cell in some of its parts is exhausted, it seems logical to advocate rest as a therapeutic measure. Experience has proved the wisdom of the rest cure as inaugurated by our great American neurologist. If the disease itself was not born on American soil, its successful treatment certainly was. The Weir-Mitchell rest cure in some of its modifications has become the recognized treatment for the various types of simple neurasthenia the world over. Its essential features are isolation, absolute rest, diet, massage, electricity and the personal influence of a good nurse. It is unnecessary to dilate upon the various details of the rest cure, as the physician usually leaves their proper execution to the trained assistants of the various sanatoria. However, we are often compelled to treat neurasthenics at home,

and here we must institute some form of rest cure to meet the requirements of each case. We may advise the patient to sleep longer in the morning, to exercise some and to drink milk and eat raw eggs after meals and, somewhat later, between meals. In addition he is to be told to take short walks, to rest after meals, not to read exciting literature, to retire early, to abstain from alcohol, tobacco and sexual indulgence.

As regards symptoms, constipation must be treated by abdominal massage, the drinking of sufficient water and, if of long standing, cascara should be administered in small doses, say 15 to 30 minims of the fluid extract three times daily. An occasional calomel purge is beneficial. Sodium phosphate in dram doses three times daily is often followed by good results. Strychnin does not seem to agree with neurasthenics; it has a tendency to cause unrest. I prefer the bromids and particularly the sodium salt. It must be noted that of all the drugs used in neurasthenia the bromids give us the best results. The usual dose is 15 grains three times daily after meals.

As the effects of bromids are considered sedative for nerve cells, it would seem as though the depressant and sedative effects were exercised on the hypothetical positive or peripheral zone of the cell, while the negative central zone is recuperating, storing up energy. I will say what I have often said to my students: when the patient is unable or unwilling to take a real rest cure, it is our duty to give him an artificial rest cure, and for this nothing is better than the administration of bromid. I also desire to emphasize that while the neurasthenic is not to be classed with the psychopath or hysteric, combinations may exist. Even were this not so, there is a psychic element of introspection and the tendency to magnify the importance of symptoms must be combated by appropriate psychic treatment. Whether we use suggestion or persuasion in addition to building up the exhausted neurones is immaterial. Of course, you are all familiar with the fact that a thorough examination of the patient and a frank statement that there is no organic disease present is in itself a helpful suggestion. It is, perhaps, needless for me to repeat that to ridicule or poke fun at your patient by telling him that he only imagines the disease only irritates an already hypersensitive individual. In conclusion, I wish to say that when neurasthenia is properly managed it ceases to be the dreaded specter of the practitioner, but becomes rather his welcome friend, for it brings practice and reputation.

PARAMETRITIS (VIRCHOW) VERSUS PERIMETRITIS—BEHAVIOR, DIAGNOSIS AND TREATMENT.*

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CHICAGO.

The two pelvic diseases, parametritis and perimetritis, are so often confused, the one with the other, that we must always carefully bear in mind the anatomic location and behavior of the former, together with its

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peculiar clinical symptoms and objective signs. This care is very necessary because of the close proximity of the tissues to other tissues even more frequently implicated and especially in deciding the route and method of operating and draining, which differ widely, viz.: the parametric, via the vagina almost exclusively, the perimetric by the vagina or by the anterior abdominal route, or by both, according to conditions.

Before proceeding I ought to mention that Osiander in 1771 considered these to be psoas abscesses, and even went so far as to point out the frequency of psoas abscess in childbed. Dupuytren and Grisolle consid-

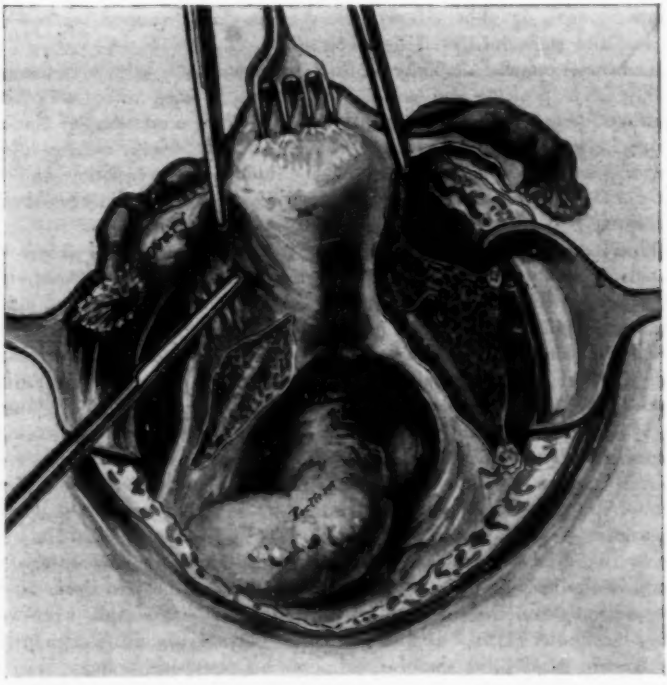

Fig. 1.—Incisions in the normal broad ligaments, exposing the loose parametrium in a case of pyosalpinx (Doederlin).

ered them of paratyphilitic origin. In 1862 Virchow demonstrated the site and origin in the morgue and named it parametritis. In 1869 Duncan gave a correct description of what he termed pelvic phlegmon. In 1886 Freund's classical paper placed the disease of the pelvic connective tissue in its proper place among the pelvic lesions.

PARAMETRITIS.

This is the term that should be used solely to designate an inflammation of the parametrium, i. e., the subperitoneal pelvic connective tissue which surrounds the uterus, as it lies in the pelvis underneath the pelvic

folds of the peritoneum. This loose connective tissue begins anteriorly in the cavum Retzii, just above the pubis, then passes around the bladder (paracystium), uniting it to the cervix and vagina, then around the lower half of the uterus, especially laterally and up between the leaves of the broad ligaments, for about their lower half (parametrium), and from the level of the internal os bordering laterally and under Douglas' sac to and around the rectum (paraproctium), thence upward to behind the sigmoid romanum on the left. On the right side it passes up behind the cecum and appendix (Korte's space). On both sides, extending up as high as the kidneys (paranephrium), it lines the whole of the region extraperitoneal, or so-called preperitoneal in front, subperitoneal below and left and right retroperitoneal behind.

The looseness and mobility of this tissue normally allows of the easy varying of the position and size of all the pelvic organs, and is very essential when we consider the frequently marked fecal distention of the rectum and consequent displacement of the cervix anteriorly before defecation, the enormous enlargement of the uterus in pregnancy and the filling, often distension, of the bladder, retroverting the uterus, before urination.

This connective tissue, together with the blood vessels and nerves and the pelvic folds of the peritoneum above it, enters into the formation of the so-called uterine ligaments—uterovesical, round, broad, and uterosacral—each of which has more or less smooth muscle fiber, derived from the external longitudinal layer of the uterine wall, adding to its contractility, which assists in restoring the organs again to their normal position after each physiologic displacement. These so-called uterine ligaments undergo hyperplasia and hypertrophy during pregnancy and involution again after labor is over.

O. Busse, of Greifswald, considers the histologic examination of the parametrium much neglected and states that most writers are still satisfied, even to-day, by quoting Virchow's ideas as given in 1862. He states further that Bichat's experiments by the injection of air and water demonstrated the very great importance of this loose connective tissue in the lower animals and the human and that fluid did not simply burrow by purely mechanical laws, but followed certain layers, and further mentions that Koenig tried these same experiments on puerperal women, dead of some disease other than puerperal fever. Schlesinger used a solution of the consistency of pus and believed, by a series of injections in various places, to be able to give the site of the atrium of the entrance of the infection by the method of the spreading of the pus in the parametrium. These injections were repeated by Rosthorn, Snegireff, Goubaroff and Jung. The latter considered the worth of these experiments as solely teaching of pelvic topographical conditions, i. e., the large connective tissue spaces and the loosely united parametric tissue and resisting septa. Busse says these experiments do not teach all of the process, because the bacteria and toxins spread at first via the preformed blood and lymph spaces, and only eventually lead to infiltration and the formation of pus. He states that there is, firstly, an inflammatory edema, then coagulation

and the formation of fibrinous material, much like that described by Grawitz in peritonitis, later a breaking down of the tissue, and fat metamorphosis of the smooth muscle fibers of the parametrium. Free pus in any quantity in the parametrium can naturally burrow in the direction of least resistance, the direction depending on the original site of pus formation.

The cause of puerperal infection is undoubtedly always contact infection before, during or after labor or abortion, by coitus, digital examinations or operations or imperfectly applied puerperal napkin, especially when the cervix lies close to the vulva or even protrudes, which it often does for the first one to three days after labor is over.

H. M. Little states that Walthard found the uterus sterile in 10 unexamined cases and in 10 cases that had had digital examinations during labor bacteria were found present in 7 of them. The teachings of Doederlein of the self-protecting power of the healthy acid vaginal secretion have been confirmed by the very recent exhaustive experiments by Natvig, who states: "Bengelsdorff found the vaginal secretion at birth acid or it became acid soon after birth, while still free from bacteria. Acidity is not necessarily due to Doederlein's vaginal (leptothrix-like) bacillus, but this latter grew naturally in the acid vagina and also generated more acid. Streptococci and parapneumococci do not thrive well in the acid vagina, because of their low toleration of acidity. He considers that Doederlein's bacillus, therefore, was not the sole agent in vaginal autoantisepsis. That the whole vagina from the vulva upward was protected by the acid secretion he considered true; that the "show" lessened this protective power, as did also the lochia, by lessening the acidity; as did also any excessive blenorrheal discharge, which fact is also confirmed clinically, for Kaltenbach and Bumm both noticed that women with parametric infection very frequently infected their children with ophthalmia neonati gonorrhoica.

That streptococci are the most frequent cause (Pfannenstiel Jung) of parametric abscess seems to be the general conclusion from bacteriologic examination, yet it must not be forgotten that staphylococci, pneumococci, bacilli coli, influenza and even the Klebs-Loeffler bacilli are on record as being found.

The cause of parametritis may, then, clinically be said to be due to a lack of surgical cleanliness in labor or abortion and the gaining access of infecting micro-organisms, especially streptococci, before, during or after:

(1) Abortion, or term labor, or operation (dilatation, curettage, etc.), resulting in the opening of an atrium through which infection can pass to the parametrium.

(a) By incomplete tears of the cervix and infection invading the parametrium via the open lymphatics.

(b) By complete tears in the cervix that extend entirely into the (paracervical) parametrium at the base of the broad ligament laterally or latero-posteriorly or less often anteriorly, allowing the infection to occur direct. Especially may these tears be extensive in primiparæ with rigidity of the external os or due to the misuse of ergot or the very common

premature application of forceps. Bernutz found 35 cases after term labor to one after abortion. Tears extending through the vaginal fornix naturally give the same result.

(c) Even though there be no tears, the simple abrasions of the cervix mucosa or, indeed, the wound surface of the corpus mucosa during or after abortion, etc., open an atrium for bacteria, which in cases of infection is especially liable to result in parametritis due to the bacteria passing via the lymphatics through the whole thickness of the cervix; though probably a greater proportion of these than is suspected have partial or complete perforation of the cervix wall by the catheter of the abortionist or the sound or curette of the operator, penetrating to the parametrium but not passing through the peritoneum.

In a case of criminal abortion reported by Dr. Charles Adams, of Chicago, a piece of rawhide 7 cm. long was pushed through the uterine wall and probably under the left plica Douglasii and presented later in the left second sacral foramen. There never was any peritonitis at any time, and consequently I think Dr. Adams' idea that it passed through Douglas' sac (intraperitoneally) erroneous. These perforations into the parametrium only must not be confused with perforations that pass through the peritoneum also, an interesting collection of which were given from the literature recently by Dr. William Hessert.

There is still another puerperal origin of these pelvic abscesses, according to Kuestner, viz.: (d) A thrombo-endo-phlebitis (puerperalis) in which the infected thrombus in the uterine sinuses extends into the uterine veins in the parametrium and later ruptures through the vein wall into the loose parametric connective tissue; this probably is comparatively a more frequent source of pelvic abscess than is generally conceded. This possible origin of abscess should always lead one to be careful in making a pelvic examination in all puerperal infections, as roughness can easily dislodge such an intravenous thrombus, with resultant pulmonary embolism with sudden attacks of dyspnea or even sudden death or pulmonary abscess, which is naturally still more serious than the parametritis.

Lastly, it must always be borne in mind that secondary infections of the parametrium can occur from a primary infection via the sigmoid or rectum on the left or cecum or appendix on the right or, indeed, from either kidney region posteriorly or from the bladder or via the blood vessels, though neither of these come within the scope of this paper, yet they should always be considered as a possible explanation of parametric phlegmon in the Virgo intacta.

The clinical divisions of parametritis which I have made are: (a) Simple exudate into the parametric cellular tissue, which may be of but small size and of so little virulence that resolution and absorption and even complete recovery later occur, so that no trace of any thickening is appreciable in the broad ligament during life (per vaginum) or when the abdomen is open for laparotomy or even at the autopsy. When we think of this the remark by Deaver that pelvic cellulitis is a rare condition is not surprising. Large exudates also may undoubtedly occur and be recovered from without ever being suspected.

Such an exudate would usually displace the uterus, if non-adherent, to the opposite side and encase it. It would be easily diagnosed if examination was made. But it is not usually discovered during the puerperium, as the genital canal is a *noli me tangere* at this time. The large exudate may also be resorbed, so that a few months later no trace of it can be discovered by touch; though usually the examining finger appreciates some induration in the broad or uterosacral ligament often very extensive with a cord-like shortening of the ligament, dragging the uterus to that side of the pelvis. Bandl stated that 58 per cent. of women who had borne children had appreciable cicatrices in the broad ligament. This percentage has probably materially lessened since the generalization of better antiseptic precautions in obstetrics.

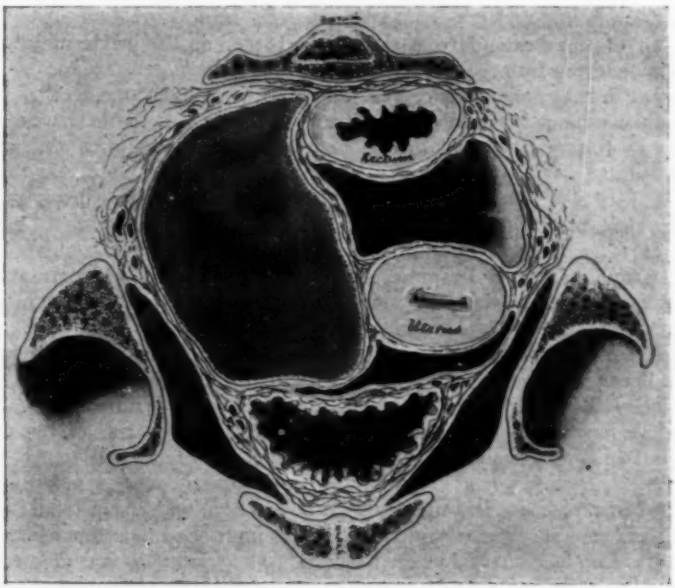

Fig. 2.—Parametric abscess crowding the pelvic organs to the left.

(b) Suppuration occurs with the formation of a so-called pelvic parametric abscess or phlegmon. They may be multiple at first, often breaking later into one large phlegmon, often of enormous size, because of the before mentioned looseness of the cellular tissue and consequent ease with which an exudate spreads. While the parametrium contains big blood vessels, it is comparatively poor in capillaries, and the walling off by small-cell infiltration and the formation of so-called granulations, pyogenic membrane, is less easily brought about than in denser tissues well nourished by capillaries.

In the latter the denser tissues themselves form some resistance to the spreading of the primary exudate and allow time for the rapid small-

celled infiltration to surround and wall it in until the granulation membrane can be produced. Indeed, in virulent cases the burrowing in the loose parametrium can be so rapid that in a short space of time the larger part of the pelvic connective tissue may be involved in one enormous phlegmon.

The behavior of an extensive collection of pus in the parametrium can only be thoroughly understood by keeping in mind the foregoing remarks on the character and extent of the parametrium. As the pus increases in quantity, it usually burrows in one or more of the following directions, probably dependent on the location of the primary focus in the parametrium: (a) It may raise the whole ligament lata from one lateral edge of the uterus to the lateral pelvic wall, extending upward, and separate the two broad ligament leaves as high as the meso-ovarium or meso-salpinx.

(b) It may extend from the lateral border of the pelvis under the peritoneum up into the fossa iliaca.

(c) It may extend under and to the left of Douglas' sac, to the loose connective tissue behind the Sigmoid Romanum or even to the left kidney.

(d) It may raise the cul-de-sac and lie sub- and retro-peritoneal, next the sacrum.

(e) It may pass toward the right under the cecum into Korte's retro-peritoneal, paratyphilitic space and even to the right kidney.

(f) It may burrow down between the rectum and vagina. This last fact should especially be borne in mind in operating, as this burrowing makes the usual opening in the fornix vaginæ non-dependent and increases the difficulty of drainage.

(g) Suppuration may occur in the utero-vesical parametrium, though this is comparatively infrequent as a result of puerperal infection. Yet it does occur from this source as well as secondary to infection of the bladder mucosa or wall and occasionally following infection of the pre-peritoneal connective tissue after laparotomies.

(h) The fluid portion of the pus in a parametric abscess, may be absorbed in rare instances, and so-called inspissation and encapsultation of the pus occur, sometimes in old cases even being walled in by lime salts.

(i) An abscess may remain with slight change in size and the active process subside, probably from attenuation of the micro-organisms. Such cases may continue months with a comparatively slight fever (fièvre hectique), e. g., temp. 100° F., some night sweats, anemia, anorexia, loss of weight, etc., even resulting in amyloid kidney.

(j) The abscesses may point, according to Dührssen, most often above, less often under:

(1) At Poupart's ligament. (2) Through above Crista ilei at the edge of the quadratus lumborum muscle or at Petit's trigone. (3) Via the foramina ischiadic or sacral under the glutei. (4) In the cavum Retzii in the anterior abdominal wall above the pubis. (5) In the vagina, which is the most desirable place of evacuation. (6) In the rectum, which is always undesirable as a place of opening. (7) In the bladder. Bazy reports 8 cases of rupture into this viscus. This, unfortunately, is rare, as it exposes the patient to the danger of an

ascending ureteritis and pyelonephritis. The case of parametritis, reported by Hoff, as breaking into the pyelon, was undoubtedly, from his article, a case of suppuration in the paranephrium and not the parametrium. (8) The sepsis may be so virulent and the course so acute that the patient succumbs in a few days, even though previous to the infection she was a splendid example of physical perfection. (9) Peritonitis can occur if the parametric exudate lies immediately under the peritoneum. The degree of involvement of the serosa differs in severity according to the virulence, site and extent of the under-

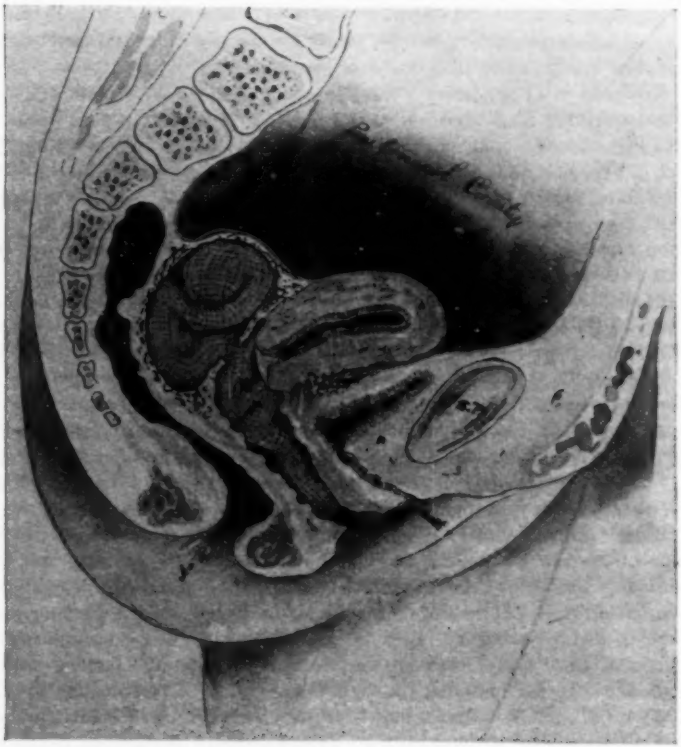

Fig. 3.—Gauze drain in parametrium, raising the peritoneum of Douglas' sac.

lying infection. In the lighter forms of peritonitis, complete restitution may result after the evacuation of the parametric abscess or firm adhesions of opposing surfaces of the peritoneum can occur or the formation of bands, spiderweb-like, or, indeed, the infection can pass through or rupture through with a peritonitis purulenta, local or even general.

It must not be forgotten that in every case of parametritis there is also liable to be some endometritis and by extension via the tubes by continuity to the peritoneum, peritonitis as well as metritis; the last either by extension from the endometrium or from the parametrium.

The prognosis seems to be often impossible to make either from the history or the pelvic or the general physical or even bacteriologic examination. Laubenberg says in the acute infections the blood reaction is quicker, i. e., leucocytosis is quicker and quicker return to normal occurs after recovery, while in long drawn-out cases the return to normal is slow. Leucocytosis was mostly of the polymorphonuclear while the eosinophiles were diminished. He never observed nucleated red corpuscles. Dutzman says: "In cases where pus was present, leucocytosis invariably occurred. The degree of leucocytosis depended on the virulence of the pus. In cases where gonococci or colon bacilli were found, 11,000 to 13,000; in streptococcic infection 20,000 to 30,000 whites were found; a high count in acute inflammatory exudate generally indicates a favorable prognosis." A normal count he considered of bad prognosis.

Symptoms.—The history of these cases is usually that of chill and rise of temperature, after abortion or term labor followed by pain, usually pelvic, spontaneous and localized sacral or inguinal or diffuse abdominal pain, sometimes radiating to the leg on the side involved, one or both limbs being flexed, pain on pressure, or pain only on removing the hand, after pressure over the hypogastrium has been made. Difficulty in defecation and in urination may be present. If the exudate has burrowed down between the vagina and rectum, a marked rectal tenesmus may occur, or, if situated near the bladder, vesical tenesmus. Tenesmus of either of these organs should warn one of the close proximity of the abscess to the wall of the viscus, and indicate early operation to avoid perforation. A case recently operated by me was treated for one year as a case of intestinal tuberculosis. Operation resulted in recovery. If the serosa is more or less involved, causing a localized peritonitis, the attending perimetritic symptoms sometimes overshadow those of parametritis.

The Diagnosis.—(a) Between the extraperitoneal or parametric form and intraperitoneal or perimetric form of suppuration, differentiation is often very difficult, but can usually be made by the parametric form appearing lower in the vagina and more surrounding or encasing and immobilizing the uterus, as it were, usually postero-laterally, displacing it latero-anteriorly. The vaginal fornix has a boggy feel in parametritis. There is also a loss of the gliding sensation to the finger in the fornix vaginæ, of the vaginal wall on the loose parametrium, which is almost diagnostic. In perimetritis, the signs are those of a peritonitis; if both are involved, the symptoms naturally are those of both, with those of peritonitis usually predominating. The aspirating needle for diagnosis is not devoid of danger and can usually be dispensed with.

(b) From fibroids. In parametritis the fever, often chill at onset, pain, tenderness on palpation and immobility, and the absence of the characteristic fibroid hardness.

On the other hand, fibroids are occasionally cystic and soft, and may suppurate, causing fever, etc. If inspissation and encapsulation of the parametric pus or exudate occur, it can become gradually smaller and harder, and may after a while even become as hard as a fibroid. While parametritis protrudes usually deeper in the vagina than the usual

corpus fibroid, yet if the latter be intraligamentous or of cervical origin it also may grow low into the parametrium and bulge the vaginal fornix.

(c) From ovarian tumors, by the afebrile history and peculiar consistency and position of the ovarian tumor, which is usually intraperitoneal and pedunculated, but may be extraperitoneal, as are also parovarian cysts, though even then it should be simple to differentiate unless suppurating, when it may be impossible. Ovarian cystomata are somewhat elastic to touch; ovarian fibroids and very small ovarian cystomata are fibroid hard.

(d) Extra-uterine pregnancy, by the anamnesis and the course, the history of one or two months' amenorrhea and the signs of pregnancy. In retro-uterine hematocele, the symptoms are those of shock and concealed hemorrhage. The uterus is usually pushed directly forward onto the pubis. The examination over the hypogastrium, which should be done in all cases, often shows a prominence usually to one side, frequently easily palpated and giving dullness on percussion, not changing on change of position of the patient. In long-standing cases it may simulate a localized tubercular peritonitis, though the vaginal examination should allow of its easy differentiation when assisted by the history and a knowledge of the general physical condition.

Treatment.—(a) The hot-air treatment Dutzman used in 20 cases. Some were fresh suppurating cases, others old exudates, or remains of exudates in which the acute stage had long since subsided, and in which partial resorption had already occurred. He states that hot-air treatment made the prognosis better for the former and even cured some of the chronic cases. Bier also used hot air as an adjuvant to the incision with, in his judgment, good results.

(b) The serum treatment does not seem to me sufficiently settled for me to do more than mention it for consideration.

(c) The incision and evacuation of pus is the treatment of which there can be no question, though even this demands much consideration of the route or routes to select as well as the method of drainage.

In the acute stages, cases of intraperitoneal, perimetric inflammation are more dangerous to operate than they are after the acute stage has subsided. This rule, of operating after the subsidence of the acuteness of the infection, has been applied also to the parametric abscess. Many deaths have been attributed, perhaps rightfully, perhaps wrongfully, to the too early operation, while but little consideration has been given the technic, it usually being dismissed by the foregone conclusive remark, *"ubi pus, ibi evacua."*

(1) To select the vaginal route requires much consideration. To find pus in the parametrium with the aspirating needle does not exclude the possibility of the implication of the tubes and even the ovaries. The perimetritis symptoms that were present and probably dominated the symptom-complex at first may have subsided and those of the parametric phlegmon now be most in evidence. The extraperitoneal operation, by the incision over Poupart's ligament as made by Droese, is not suitable in women, the vaginal incision giving the best route and best drain-

age of the female paragenital tissue. The evacuation of pus, even in large quantities by the so-called vaginal section, is not necessarily proof of the completeness of the operation, for, as before stated, the tubes and ovaries may still be the site of suppuration. Conceding this to be true, we would hardly be justified in continuing through the parametric pus cavity and boldly evacuating an ovarian abscess or removing pus tubes, for the adnexal infection may be non-concomitant or differ in virulence. If the latter were the most virulent, the chances of a general peritonitis, from the clinical standpoint, would appear to be less than if the reverse, but, there being no means of a preoperative decision of this question, to say nothing of the blindness of the operation and the impossibility of keeping the intestines clean during the necessary adnexal manipulation, such a proceeding is to be proscribed.

(2) The peritoneal route via the anterior abdominal wall often gives us a better knowledge of the condition of the adnexa and the peritoneum and, even if the adnexa is not found implicated, it satisfies us that we have not omitted anything needed for a diagnosis. With our present-day technic it should be comparatively devoid of danger. In one case the author of this paper operated on an enormous parametric phlegmon extending high up above the brim through the abdominal wall, in two sittings, with an excellent result.

(3) The parametric abscess can be opened through the vaginal route as an independent operation, which, after dividing the vaginal wall, can be done bluntly with the finger, carefully avoiding injury to the peritoneum. This is usually much simplified by the knowledge gained from having intraperitoneally inspected the condition of the pelvic organs and ligaments when the abdomen was open. Drainage through the opening made in the vaginal fornix, usually posteriorly, should be done either by inserting a tube or an iodoform cigarette gauze drain, placed in the parametrium. Carelessness in drainage is especially warned against by Bovea. Irrigation should not be done, as it many times opens fresh runways for pus. Especially dangerous in this regard is the use of hydrogen peroxid. Simple drainage does not always cure these abscesses, especially if the drainage is not free and dependent, which is the case, even in the vaginal fornix, if the pus has burrowed down between the vagina and rectum below the place of opening or perhaps around the uterus.

SCROFULA.*

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Scrofula is a factor in dermatology, the importance of which is variously estimated, chiefly because of the diversity of opinion which exists as to what is to be designated by the term. Kyle says that it is nothing more than one of the manifestations of the initial stage of tuberculosis. Heyman says that it is a predisposition of the organism to inflammation.

* Read before the Illinois State Med. Soc., 1905.

Years ago Henoch and Baginsky expressed the view that it is not tuberculosis, an opinion in which I fully concur. This is the most important point to be known in regard to scrofula. Any observer may convince himself that it presents clinical phases which tuberculosis never presents; it does not run the clinical course of tuberculosis, producing ulcers and other tuberculous lesions; the nasal and throat secretions do not contain the bacillus tuberculosis, and do not produce tuberculosis when they come in contact with the skin; children afflicted with tuberculosis of joints or of lymphatic glands do not present the lesions of the eye and of the skin, which are part of the clinical picture of scrofula.

Clinically, there is no reason for believing that scrofula is caused by a specific micro-organism, and, microscopically, none can be found. All evidence favors the view expressed by Cornet that scrofula is a chronic staphylococcus or streptococcus infection. It might properly be termed a pyogenic infection of the nose and throat. The cases of scrofula which are observed in this country, like those of Europe, occur among the rich or poor, and among those who live in the city or in the country alike. The difference between the cases which are observed in America from those which are observed in Europe is that our cases are milder.

Most writers believe that heredity plays a part in the production of the disease. I do not. Where there are several children in a family, it is rare to observe more than one affected with this disorder. It is also rare to obtain a history of the same disease having been present in either of the parents during their childhood. In most cases the disease develops in the second year of life or later; in a few cases, I have been informed by the parents that the first evidence of the disease was a bronchitis, which appeared a few days after birth, but that can not be accepted as evidence of heredity. The idea of heredity is due, in my opinion, to the fact that scrofula is frequently confounded with tuberculosis, and is based on the observation of European and not American cases.

Cases of chronic pyogenic infection of the nose and throat may be observed, in which the local lesions have almost entirely disappeared, leaving distant skin and eyelid lesions to dominate the clinical picture. In the presence of such cases the observer might easily be misled into the belief that the affection began primarily in the skin. That the infection actually originated in the nose may be determined by following a number of cases during a period of seven years' duration. In lupus vulgaris, we have another example of a disease which usually begins in some distant organ and secondarily attacks the skin, while the primary focus of disease heals.

TUBERCULOSIS AND SCROFULA.

Where scrofula or, more properly speaking, chronic pyogenic infection of the nose and throat is present, tuberculosis readily becomes engrafted. We can never determine, in a given case, when this second infection has developed; nevertheless, the division of cases into uncomplicated cases of scrofula and those which are complicated with tuberculosis is necessary for a proper comprehension of the subject. It is the observation of cases in which tuberculosis has become engrafted, which causes many clinicians to believe that scrofula is nothing more than tuberculosis.

THE LYMPHATIC GLANDS.

The cervical glands and the glands in the groin may be enlarged in children who are clinically healthy. In this form of enlargements the glands are lima-bean size and larger. Where the cervical, thoracic, abdominal or inguinal glands are enlarged in scrofula, or, more correctly speaking, from chronic pyogenic infection of the throat and nose, they are hazelnut size and larger; they are movable under the skin; they are not matted together, and they do not suppurate, but in the presence of glands of this character the clinician can never exclude the possibility of engrafted tuberculosis also being present. That engrafted tuberculosis presents a diminished virulence has been demonstrated by the experiments of Moore, in England, who produced a milder form of tuberculosis by inoculating scrofulous lymphatic glands of the neck which contained tuberculous deposits into lower animals than when tissue from miliary tuberculosis was inoculated. Where the tuberculous infection is carried from the glands to some distant part of the body, the tuberculosis which results is often quite virulent.

THE CORRECT CONCEPTION OF SCROFULA.

It is difficult to convince a surgeon that it is possible to have a chronic pyogenic infection lasting for years, without suppuration, so thoroughly is he imbued with the idea that a pyogenic infection is an acute process, terminating in suppuration; nevertheless, chronic pyogenic infection exists. Christian Fenger recognized the correctness of this. What older writers designated by the term scrofula included cases of chronic pyogenic infection of the nose and throat, which produced distant symptoms by dissemination of the pyogenic micro-organisms and their toxins, together with the cases in which tuberculosis became engrafted.

The view which we take of the subject includes cases of chronic catarrh of the nose in childhood, either with or without distant microbic or toxic lesions, under the designation of "chronic pyogenic infection of the nose and throat," as one disorder, and the same condition, with engrafted tuberculosis, as a second disorder. With this theory of the cause of scrofula before us, we can readily comprehend all manifestations of the disease. A chronic pyogenic infection of the nose and throat gradually invades the cervical, thoracic and abdominal lymph glands; it passes through the Eustachian tube into the ear, and then through a perforated drum and the external auditory meatus until it comes in contact with the skin near the external ear, producing impetigo. It may extend to the bronchial tubes. The eyes and the skin may become infected by nasal and throat secretion, often carried to distant points by the fingers.

Symptoms.—Some writers state that children suffering from scrofula are poorly nourished. I often observe the disease in well-nourished children; furthermore, it is usually stated that those suffering from scrofula have poor appetites. I find that the appetite is often unimpaired, and in some cases the children have voracious appetites, even when the disease is severe. Scrofulous children often take cold easily; they often have a clayey complexion. Chronic pyogenic infection of the nose and throat produces distinct symptoms, which are never alike in any two cases.

The Eye Lesions of Scrofula.—None of the eye lesions of scrofula is tuberculous. On the free border of the eyelids, inflammatory nodes are often observed which are very strongly indicative of chronic pyogenic infection of the nose and throat. They are of considerable diagnostic value, when one has become accustomed to associate them with nasal infection. Phlyctenular conjunctivitis is always due to absorption of micro-organisms, or possibly their toxins, from the nose. Scrofulous conjunctivitis and keratitis are conditions produced by inoculation of micro-organisms contained in nasal, ear or mouth secretion being carried into the eyes by the fingers.

THE ERUPTIONS ON THE SKIN IN SCROFULA.

Scrofuloderma.—Some writers apply this term only to those secondary tubercular ulcers of the skin of the neck which result from suppuration of subjacent tuberculous glands. This is an incorrect use of the word. Scrofuloderma is subcutaneous tuberculosis; it has nothing to do with chronic pyogenic infection of the nose and throat, and it may develop on any part of the cutaneous surface. It may be associated with engrafted tuberculosis of the glands of the neck; it may be associated with internal or surgical tuberculosis; or it may be a primary affection. The word scrofuloderma and its French equivalent, "La Gomme Scrofulo-tuberculeus," are terms which should be dropped, and we should employ in their stead the expression "subcutaneous tuberculosis." This form of tuberculosis presents itself clinically in many ways; usually a pea-size nodule appears above the surface; in other cases there is no elevation. After a time, central softening occurs in the nodule, which has attained the size of a cent piece, and this central softening may be due to the formation of fluctuating connective tissue or to the formation of pus. Where these subcutaneous tuberculous deposits break down rapidly, they form cold abscesses. The cutaneous covering of a subcutaneous tuberculous deposit may be destroyed by ulceration, producing an ulcer, from the surface of which unhealthy granulations spring up and form a cauliflower growth, or this form of tuberculosis may be transformed into lupus vulgaris.

Erythema Induratum Scrofulosorum.—This disease has been a favored theme of discussion among dermatologists during the past few years. Certain writers believe that it is one of the many forms of subcutaneous tuberculosis simply because they do not follow Bazin's original description with sufficient accuracy. That subcutaneous deposits of tuberculosis may closely simulate erythema indure of Bazin in their objective symptoms must be obvious to every experienced observer, but when the two conditions are considered side by side in all their clinical aspects the difference is apparent. It is essential that the clinician should be familiar with Bazin's original description of erythema indure, and that nothing should be designated by this term which does not closely tally with this description, which reads as follows: "Erytheme indure is of a scrofulous nature; it is not rare; it is characterized by red, indurated plaques, which disappear momentarily under finger pressure. Passing the finger over the surface of the skin, one can feel an induration in the skin which ex-

tends into the subcutaneous tissue to a variable depth. The red color of the plaque is more or less marked; often it is violaceous. The plaques do not present a marked outline; they are more marked in the center than at the periphery, where they gradually blend with the surrounding tissue. The plaques do not itch. Pressure is hardly painful. The affection usually occurs on the legs; more often in girls than in boys. I have seen it often on the legs of young laundresses, which present all attributes and physical appearances of scrofula. The seat of predilection for the development of the disease is the external and lower part of the leg. We observe it sometimes just above the heel, along the tendo-Achilles. It may develop on the face, and I have seen it in this region associated with scrofulous disease of the eye."

The discussion regarding this disease is as to its nature. Some writers find that it presents the structure of the tubercle. Against this view we have the fact that it has recently been shown that in many conditions subcutaneous fat tissue undergoes a metamorphosis, in which it presents the microscopical appearance of tuberculosis. The discovery that atrophy of fat tissue has heretofore been mistaken for tuberculosis is one of the most important recent additions to pathologic knowledge, and will necessitate a complete revision of the histopathology of diseases of subcutaneous tissue heretofore classified as tubercular. All writers who have studied erythema indure since fat atrophy has been recognized agree that this is what is present in this disease.

At the present time some believe that erythema indure is chronic erythema nodosum; others that it is a tuberculide. A tuberculide is any eruption of the skin which is inevitably associated with tuberculosis; which does not contain the bacillus tuberculosis; will not produce tuberculosis when inoculated in lower animals, and which does not show the structure of the tubercle. The disease may be due to toxins derived from chronic pyogenic infections of the nose and throat.

Lichen scrofulosorum is one of the many cutaneous manifestations of tuberculosis which is associated with a distant focus of tuberculosis. The primary tubercular disease from which the eruption is derived is usually some form of surgical tuberculosis, such as tuberculosis of lymphatic glands, bones or joints. It is more common in childhood than in adult life, and it is apt to appear whenever a tubercular child develops fever, due to the tubercular disease, and not to an intercurrent affection. Its appearance may be the first evidence of the presence of engrafted tuberculosis in a given case of scrofula. The eruption comes out suddenly on the chest or abdomen, in the form of pin-point to pin-head size papules, which are conical; they are the color of the normal skin, or pale red, and they are situated about the pilosebaceous follicles. These little papules are clustered together, forming plaques which are oval or rounded in form, and the size of a silver dollar. In doubtful cases the lesions may best be seen by stretching the skin between the thumb and finger.

I agree with those who regard this tuberculide as a tuberculous toxemia, and not with Neisser, who thinks that it is miliary tuberculosis. Miliary tuberculosis, when it extends to the skin, produces an entirely different clinical picture from this disorder, as is shown by the cases of

Kaposi. It is easy to find bacilli in miliary tuberculosis; they are almost never found in this disease. Inoculation of tissue from this disease does not produce tuberculosis.

Chillblains.—These are caused by tuberculous toxins, and when present in cases of scrofula they indicate that we have to do with the engrafted tubercular form of the disease. Hyperidrosis is usually not considered to be a symptom of scrofula, but we see it so frequently in the pyogenic form, in the total absence of rickets, that we consider its presence a matter of importance in the diagnosis of some cases.

We frequently observe cases in which beads of perspiration stand out on the nose of scrofulous children, and along the line of the hair on the forehead, together with excessive sweating of the hands and feet, which are also cold and clammy. Examine the stockings of scrofulous children, and you will often find them damp from perspiration. This excessive cold perspiration, which is caused by pyogenic nose toxemia, may persist through life.

Granulosis rubra nasi is a disease affecting the sweat glands of the tip of the nose and caused by this excessive sweating. It was first described by Luithlen, in 1900, and it was named by Jadassohn. It is always associated with the pyogenic form of scrofula. The eruption consists of pin-point to pin-head-size bright red points, which are the mouths of the sweat glands, and in some cases the entire tip of the nose presents an additional hyperemia. The disease is usually called acne rosacea by nose and throat specialists, who overlook the fact that acne rosacea does not occur in childhood.

Impetigo.—Most of the eruptions of the skin occurring in scrofula which are called eczema are not eczema, but are due to the same pyogenic micro-organisms which infect the nose and throat. They are, therefore, cases of impetigo caused by the pyogenic micro-organisms being inoculated into the skin either by discharges from the ear, nose and mouth, or by the fingers. Where the infection is produced by nasal discharge, the earliest evidence is a fissure in the mucous membrane of the nostril; where the infection has progressed, the infection produces redness, swelling and some pustulation of the upper lip just below the nose. In some cases these lesions will not be observed unless carefully sought for. The third step of the pyogenic infection is the hypertrophy of the upper lip, which is a condition of elephantiasis, by which the upper lip projects over the lower lip, sometimes extending almost to the point of the chin. Although common in Europe, this lesion is rare in this country. In one well-marked case which came under my observation, the diagnosis of sarcoma of the lip had been made and excision advised. The application of ointments to the lip and inside the nose, together with massage, will cause the lip to decrease in size to a marked degree.

Affecting other parts of the skin, the pyogenic infection produces plaques of inflammation studded with split-pea-size excoriations covered with gummy crusts; in a few cases we find vesico-pustules, the rupture of which produces these excoriations. The crusts contain the pyogenic micro-organisms. The vesicles of eczema are sterile. Through auto-inoculation these micro-organisms infect scratch-marks, and in some cases

produce deep phlegmonous inflammations, which terminate in abscess formation. This continual auto-inoculation may continue for years, and it can not always be checked by the application of dressings.

We observe a special form of this pyogenic infection occurring in children, which consists of small papules, umbilicated pustules, crusts and scars, which somewhat resemble chickenpox, but which differ from that disease in the location, occurring in patches over the trunk, and in the fact that it lasts longer than varicella ever lasts. Such pus infections of the skin do not simulate chickenpox sufficiently to deceive a dermatologist, but they often lead to errors in diagnosis by general practitioners. The scars produced by pus infections, as Alexander has said, can not be distinguished from the pitted scars of chickenpox. Whether the pyogenic infection is always carried to the skin by auto-inoculation is a question which we can not determine at the present time. It is possible that the eruption is produced in some cases by micro-organisms eliminated through the glands of the skin, as in many cases the pyogenic infection is generalized, as is shown by the fact that distant lymphatic glands are involved. Where antiseptic dressings are applied to a part for weeks, so that no auto-inoculation can occur, we have seen the eruption reappear under the dressing.

Eczema.—That the primary lesion of eczema is sterile is an established point in pathology. No eruption of the skin which produces impetigo lesions should be called eczema. The cases of what I call eczema in scrofulous children are patches of erythema occurring on the cheeks and about the nose and mouth. In some cases, the eruption is so superficial that it is scarcely visible, while in other cases the infiltration is deeper. The patches have a rather well-defined border; their surface is red, dry and scaly. In some instances, the center of such a patch will clear, leaving a circinate plaque, which is often called ringworm. Such eruptions often increase in winter. I have observed that children presenting such eruptions of the face often have cold, sweaty hands and feet, enlarged glands in the neck, and enlarged tonsils. They take cold easily, breathe through the nose at night, and are constantly clearing the throat. Where such cases have been referred to throat and nose specialists and adenoids removed, the patches of eczema have disappeared within a few weeks. In fact, the removal of adenoids in such cases gives better results than internal treatment combined with the application of ointments. In some cases, patches of eczema are present, without adenoids in the throat, and then the eruption is usually supposed to depend on gastro-intestinal derangement. But a careful study of such cases convinces me that even here there is present a pyogenic infection of the nose and throat in moderate severity, as the basis of the dermatosis. The manner in which pyogenic infection of the throat produces patches of this kind is unknown.

Scrofula with Bronchitis.—The severest cases of scrofula are those in which there is also a chronic bronchitis present. I believe that this bronchitis is also a pyogenic infection. It is not tuberculous, because in most cases it heals. The physical signs present are not those of tuberculosis, and the expectoration does not contain the bacillus tuberculosis.

Some of the cases which I have observed have been examined by others, who have never found tuberculosis present. This form of bronchitis may develop shortly after birth, but usually it appears after the fifth year of life. After the eighth year of life, the expectoration may be abundant, half a teacupful daily in some cases. It is very possible that the bronchitis may exist without the throat and nose symptoms being present, but I have not observed it.

The Heart.—After the bronchitis has existed for several years, a peculiar lesion of the heart develops. It is not a valvular lesion, but rather a peculiarity in the heart beat. The heart action is intermittent and irregular. First it beats fifteen to twenty strokes rapidly; then it intermits two or three strokes, and then beats fifteen to twenty times, not as rapidly as at first; then once more returns to the original beat. In a few cases the little patients complain of a pain over the heart. Cases have been observed which cause me to believe that the heart beat falls to about sixty beats a minute, and becomes more regular at the time of puberty, when the pyogenic infection diminishes or heals.

Scrofula and Syphilis.—Syphilis may produce eye lesions which closely simulate scrofula, but a careful study of all the symptoms present in the case will almost invariably prevent errors in diagnosis. In another class of cases, patients have a pyogenic infection of the nose and throat, and congenital syphilis. The clinician must not rely on a syphilitic history in the parents for the diagnosis of these cases. They are to be detected by finding a lesion characteristic of syphilis in some distant part of the body. In one of my cases, a child had pyogenic infection of the nose and throat and mucous patches of the tongue; in another we found pyogenic infection of the nose and throat and a syphilitic gumma of the leg. When mercury is administered in these cases, the syphilitic lesions heal, and with them the eye lesions, which are not syphilitic, but pyogenic toxic lesions. It is probable that the explanation of this clinical observation is that as the child's general health improves the pyogenic toxin is eliminated. Hyde and McEwen are entitled to the credit of directing attention to the fact that long-standing sweating of the hands and feet, and certain pathologic conditions of the nails are associated with brachycardia and tachycardia. In cases of this kind, a possible history of scrofula in childhood should be sought.

In conclusion, the term scrofula should be dropped, and we should recognize under the old diagnosis, scrofula, the following conditions: Pyogenic infection of the nose and throat with or without toxemia; pyogenic infection of the nose and throat with tuberculosis; pyogenic infection of the nose and throat with syphilis.

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MAY 1906.

MEDICAL ORGANIZATION.

During the last month much has been said in Illinois regarding medical organization. The chairman of the Organization Committee of the American Medical Association, known in medical circles all over the land as an authority on these lines, has devoted an entire month to talks and conferences with the public and the members of the profession. In thirty-one of the principal cities of the state, meetings have been held for the discussion and consideration of the needs of the profession and the public. All who attended these meetings have been aroused to broader views and stimulated to greater activity. It now remains for the organized profession throughout the state to carry out the proposed reforms and make real the ideal conditions described as attainable. In this connection it is, perhaps, desirable to pause and ask ourselves what effective medical organization really is and why it is desirable.

The county is the unit of our civil organization. It was, therefore, most wisely chosen as the unit for medical organization. The State Association and the American Medical Association are only the aggregate of the county society units. They, therefore, can take care of themselves. If the county flourishes, the higher organizations can not help but prosper. The ideal county society, then, should have the following characteristics:

1. It should include every moral, reputable, legally qualified physician in the county. The time has come to do away, once for all, with the absurdities of sectarianism. There is no more reason for "schools" of medicine than for schools of chemistry or geology. Scientists differ as to the age of the earth, the effect of fire and water on rocks, etc., but they do not, therefore, organize rival schools and refuse to co-operate. Sectarianism in medicine is largely responsible for present-day conditions. Differences in theories regarding the action of drugs, the branch of medical knowledge concerning which we know the least, are no fit grounds for division of a great and noble profession. It is significant, as has been observed, that men quarrel most bitterly regarding matters of which they know the least. Mathematics, the most exact of all sciences, has never caused the slightest rancor. Theology, of which we know nothing whatever and which consists of pure speculation, has deluged the world in blood for ages. Physicians to-day are homeopaths or eclectics, just as they are Presbyterians, Baptists or Methodists, because they were born and brought up as such. There is only one science of anatomy, physiology or bacteriology. There can be but one "school" of scientific medicine. He who attempts to limit it is as narrow and as much in need of education as he who puts himself outside of it.

2. The ideal medical society will endeavor, as its primary aim, to make of its members the best and most capable and skillful physicians and surgeons possible. It has been amply and abundantly proven that nothing pays so well in the end as brains and work. If a physician wishes a larger income than the average, let him acquire knowledge and skill above the average. This can be accomplished through co-operation and division of labor in a way never possible through individual effort and competition.

3. The ideal county society will strive to make the people of its jurisdiction as healthy, intelligent and happy as possible by preventing disease and improving conditions. Along this line the possibilities are unlimited and vary with locality and conditions. It is coming to be more and more recognized that the doctor is a semi-official sanitary policeman. It only needs the influence and power which will come through perfected organization, to endow him with the authority to execute and administer as well as to advise and instruct. This is far off, but it will come in time.

This is the ideal condition. It can be made real or at least approximated. Every year the field of the county society is broadening, more is actuallly being accomplished. Witness the Ottawa Tent Colony, the Crawford County Conference on Tuberculosis, the work of the Morgan County Society at Jacksonville for the instruction of the public on tuberculosis, the Chicago Tuberculosis Exhibit lasting four weeks, the public-lecture course of the Chicago Medical Society, now in its third year. These are signs of the times and are only beginnings. Civilization

to-day, is more complex than ever before in the history of the world. We are, each one of us, more dependent on each other than ever men were before. In this highly complicated social organization the physician has duties, peculiar to himself, which are shared by no other class. In past years medical men, as a whole, have been true to their duties and responsibilities. That they will be equally faithful in the future there is no doubt.

THE BILL BOARDS CENSORED.

That the public conscience is being awakened to the necessity of care in the character of advertising matter placed before its view is shown by the recent action of the Association of Billposters and Distributors. The use of all sensational, vicious and suggestive paper is denounced by them, and a penalty will be laid, after Aug. 1, 1906, on members who post such paper. Five years ago this organization ruled out all objectionable medical advertising.

RATES TO SPRINGFIELD.

The Committee on Transportation wishes to announce that arrangements have been made for a round-trip rate of one fare from Chicago to Springfield via the Illinois Central Railroad. A special train will be run, leaving Chicago on the night of Monday, May 14, and reaching Springfield Tuesday morning. In order to secure this rate a party of 150 is required. All Chicago physicians intending to attend the Springfield meeting are urged to send their names at once to Dr. James H. Stowell, 103 State street.

AMERICAN MEDICAL DIRECTORY.

The Directory Department of the American Medical Association advises us that the compilation of the portion of this work for Illinois is practically complete and that the state directory is now in type. All changes and additions from now on will have to be made in the proof. It is desired that the name of every legally qualified physician in Illinois appear correctly entered in this Directory, also that due credit be given for membership in county and state societies. Your name can not appear in capitals unless you are a member in good standing of your county society and your name has been sent to the state secretary by the county secretary for enrollment as a member of the Illinois State Medical Society. If you have moved since January 1 send your change of address, if you have not already done so, to the Directory Department, 103 Dearborn avenue, Chicago. By thus co-operating you can secure a correct entry of your name under the proper address and can help to make the list of physicians for Illinois accurate and up to date.

THE SPRINGFIELD MEETING.

Practically all of the details of the approaching meeting at Springfield were given in the April number of THE JOURNAL. A few points, however, require emphasis:

1. The meeting will be held on May 15, 16 and 17, the date originally fixed. Another date was considered, but it was finally decided to make no change.

2. The attention of all members is called to the official program which appeared in the April number of THE JOURNAL. This is the most attractive program that has ever been prepared, both as far as the number of papers and the range of subjects are concerned. Every member who can should endeavor to attend the meeting and hear these papers read and discussed.

3. The social features arranged for by the local committee are very attractive, embracing a reception at the governor's mansion on Tuesday evening and a lawn fête, picnic lunch and vaudeville entertainment Wednesday evening. These special features will be enjoyed and should be largely attended.

DR. McCORMACK'S WORK IN THE STATE.

During the month of April, the entire state of Illinois has been traversed by Dr. J. N. McCormack, as the chairman of the committee on organization of the American Medical Association. Reports of the earlier meetings appeared in the April JOURNAL. The accounts of the meetings at Carlinville and Stirling, together with Dr. Black's letter, are sufficient to show the value of this work and the estimate placed on it by those who have attended these meetings. That they meet a need of both the profession and the laity has been amply demonstrated. It is also evident that the time is ripe for the medical profession to assume its proper place as a teacher of the public and to take the lead in the education of our law-making and law-enforcing bodies, in order that the public health and life may be protected against ignorance and individual greed.

It is regretted that the audiences that listened to Dr. McCormack were not much larger. In every town in which he spoke, the leading citizens said, after the lecture was over: "If you will come back, we will pack the largest hall in town with people to hear you." The attention of councilors, state and county secretaries and society members in the states which are still to be visited by Dr. McCormack, is called to this point. Get your members and their patients and friends out at the time of the meeting and then there will be no regret over opportunity lost after the meeting is over.

DR. M'CORMACK AT CARLINVILLE.

The meeting at Carlinville is reported by the local press, as follows:

Dr. J. N. McCormack, of Louisville, Ky., delivered an eloquent and instructive address in the circuit court room in this city Wednesday afternoon to a fair sized audience. He is the head of the organization department of the National Medical Association, and one of the best lec-

turers in the profession. His audience was not as large as it would have been had the lecture been delivered in the evening, but those who heard him are loud in his praises. His address was earnest, honest and at times witty and eloquent. His plea was for coöperation of the medical profession and the citizens, and the conserving of the best interests of all.

In the course of his talk he uttered a scathing arraignment of patent medicines, which he designated as "cheap cocktails;" explained the feeling of the profession toward the clergy; argued for better pay for doctors, whom he classed as members of the most noble charitable and self-sacrificing of professions; the monthly collection of fees; and in fact to use his own words "lifted the veil" on numerous questions.

Dr. McCormack explained that his attention had been called to the necessity of the work of organization in which he is engaged by his own experiences as health officer of the state of Kentucky for a long term of years. He found that the medical profession was in a state of confusion. Harmony did not prevail and one doctor spoke continually in disparagement of another. Under such a condition of affairs it was impossible for the profession to do its best work, to secure proper legislation, to inspire the necessary confidence in the public. "This lack of organization," said Dr. McCormack, "has so crippled the profession that government physicians have absolutely no power, that health departments have their hands tied, and consequently an immense loss of life and money has resulted from preventable and unnecessary diseases." "Why should a great profession allow itself to be hampered by jealousies?" asked Dr. McCormack, "no class can compare with it. Doctors do more for humanity than all your churches, Christian Endeavors, Epworth Leagues, Y. M. C. A.'s, benevolent organizations, and all such things combined. We practice what they preach." The country doctor the speaker called the noblest specimen of God's manhood. "After this monumental charity," continued the doctor, "a doctor can't live in peace with his neighbor if he happens to be a doctor."

At the close of the address responses complimentary to the gentleman's efforts were made by J. I. Rinaker, Dr. J. M. Barcus, W. H. Behrens, A. H. Bell, Rev. Dr. Canady, Rev. Todrig, Dr L. H. Corr and others. These speakers conveyed the sentinment so unanimously expressed by all that the address was heartily approved and thoroughly enjoyed by every one present. The only regrets expressed were that all citizens could not have been present to hear the address.

DR. M'CORMACK AT STERLING.

The local medical profession held a very interesting and useful meeting at the Fourth Street M. E. church, Saturday afternoon and evening. Many out-of-town physicians were in attendance, including men from Freeport, Rutland, Dixon, Ashton, Tampico, Coleta and Fulton. Dr. McCormack, of Bowling Green, Ky., was the principal speaker of the day, addressing the profession in the afternoon and the general public in the evening.

During the afternoon meeting the Doctor gave a heart-to-heart talk to the doctors, urging them to organize that they may be able to get the proper medical laws placed on the statutes of the state of Illinois. Illinois, in her medical laws, is twenty-five years behind the times. There are in the state no county health boards, no county health officers, and in but few cities do we find city health officers. In fact where these officers do exist they carry with them but little authority, leaving the medical officer in charge with his hands tied.

Doctors must and should study; the better way to do this is for several to join together in a regular course of study, one man working alone can accomplish but little. The doctor advocated the establishment of postgraduate courses in every county, having weekly meetings to discuss medical subjects. Without this it is impossible to keep abreast of the times.

At 8 o'clock Dr. McCormack addressed the public. He spoke of his work for the past five years which consisted in traveling over the United States in the interest of the medical profession under the auspices of the American Medical Association, organizing county and state societies, inaugurating post graduate courses, uniting the profession (not into a medical trust, the doctor is a Southern democrat, as much opposed to a medical trust as to the Standard Oil trust), into a strong body for the betterment of the individual members and thereby giving the public better medical services. The organized profession receives recognition by the various state legislatures and secures proper laws and sanitary regulations. The doctors are always looking for something to prevent disease, thereby removing disease, in reality working against their own livelihood. "Ours is a profession and not a trade."

The doctor who cuts prices is a danger to the community, for by the act he stamps himself as inferior to his competitors in the town wherever he may be practicing. The doctor is dealing with life and death, therefore he should have a clear, keen brain undimmed by drugs or liquor. He should be the model of the community, cleanly in habits, both physically and morally.

After the doctor had concluded his address the chairman called for responses from the audience, several of whom responded, heartily indorsing the doctor and pledging their support in the matter of securing better medical legislation in the state.—*Sterling, (Ill.) Evening Gazette.*

DR. M'CORMACK'S ORGANIZATION WORK.

The following letter from Dr. Carl E. Black is reprinted from *The Journal of the American Medical Association* for April 21:

JACKSONVILLE, ILL., April 17, 1906.

To the Editor:—I write to ask if it would not be desirable to do something to secure for Dr. McCormack audiences somewhat in proportion to the importance and value of the great humanitarian work which he is doing. It seems to me a shame for him to go on from day to day making these important talks to little groups of doctors and citizens, when every person is so vitally involved in the subjects discussed.

No one who may call on a physician for services should fail to hear these topics considered. The patrons of physicians will be greatly benefited and will look on the physician with an increased respect if he is worthy, and if not will set about to make him worthy or discard him as unworthy. It is impossible for the local medical men to do this work effectively without more detailed information as to what is to be expected.

Last Tuesday evening Dr. McCormack talked to our citizens and the room was filled with our best people. Everybody was delighted, but all united in saying that it was a great misfortune that only two or three hundred people should have had the privilege of being present.

This is what I hear every place Dr. McCormack has talked. They say, "If we had only known something of the character of his address beforehand there would have been two or three times as many present."

The fact is, Dr. McCormack is doing a great missionary work, probably the greatest missionary campaign by any individual to-day, and we should recognize it as such and give it the support and advance announcement which it deserves. The profession, as well as the people, should be better instructed in advance as to the field to be covered and the objects of these talks. If it could be made plain that the primary object is to help the people and give them a proper conception of what organized medicine stands for, it would go far toward securing the co-operation of all good citizens in doing away with inherited antagonism to the medical profession, which has long existed among our people.

The profession, as well as the people, should learn from him that the basis of most of our professional difficulties and misunderstandings with the public are to be found in the jealousies and antagonisms within our own ranks, which we are making a great campaign to eliminate. The doctors of the past have kept themselves poor by hating each other and misleading the public. Everyone should understand that one of the purposes of this great work in which Dr. McCormack is engaged is to improve the condition of the profession by pointing out its poverty, brought about by envy, jealousy and poor business methods.

He most admirably brings about a frank and open discussion of these subjects among the doctors and between them and all classes of the public. He drives home the lesson that a jealous and envious doctor, and one kept in poverty, is a danger and menace to the community, and plainly advises the public against the employment of such. Neither the doctors nor the people realize the number or importance of these problems of mutual interest.

His statement of the poor business methods of many physicians, as well as their bad professional methods, attracts attention and does great good. The drug store evil, the social disease evil, and inattention to sanitary and health matters are a few of the subjects of mutual importance which receive attention in his addresses and never fail to arouse the public.

The remedy for these and other evils and antagonisms which exist he finds in a complete understanding (organization) among ourselves and a frank discussion of every interest of the profession with selected classes of the public,, as well as the general public and patrons of the physicians. If physicians would realize the importance of these subjects they would soon see, what Dr. McCormack makes so plain, that the medical profession has no interest, including our financial condition, which is not of far more importance to the public than to the doctors.

If some plan could be devised by which at least the members of our county societies were informed in advance of the scope and importance of these addresses, it would certainly aid Dr. McCormack in his work. No man can do this effectively for himself. In order that the lawyers, bankers, editors, clergymen, teachers, druggists, legislators, commercial bodies, city and county officials, civic leagues, W. C. T. U. and Y. M. C. A. members, club women, farmers' organizations, labor unions, and all others, can be impressed with the importance of the subject, they must have some advance information as to the personality of the man as well as the character of his address. Each doctor should endeavor to have his patrons present. He will be amply rewarded by the better respect and better pay which they will give him, for they will certainly hear some of the most vital questions of the day presented in a most charming, effect-

ive and practical way. Dr. McCormack can tell the plain truth in a way which excites great interest and desire to do better, but never leads to bitterness or leaves a sting.

This work has such unlimited possibilities for good to the public, to the sister professions, and to our own profession, that it is unfortunate that we do not secure for our field worker in this great campaign of education a better hearing. Scores of my own citizens have expressed their regret at not being more carefully informed as to what was to be presented in order that they could have attended. The purposes, the evils to be corrected, the classes to be reached, the remedy to be applied, and the possibilities of the work should be understood in advance if the greatest good is to be accomplished by these addresses.

You can not too strongly impress on the profession and on the public the value and importance of the subjects, and you may rest assured that there will be no disappointment on the part of either after hearing one of Dr. McCormack's most admirable and practical addresses.

I write to you in the hope that some better plan may be devised by which the profession and the public may have more advance information in order that a greater number of people may have the privilege of this instruction.

CARL E. BLACK.

Reports from other sections of the state are equally enthusiastic. The *Sentinel*, Pontiac, says: "Dr. McCormack gave one of the best talks ever delivered in Pontiac. His lecture was devoid of all technical terms and high-sounding phrases and could be understood by the ordinary school boy of 15 years. His remarks on the organization of the profession were pertinent. He told his hearers of what great good could be accomplished by the doctors organizing and what a great work could be done toward alleviating the suffering that now exists. He was given rapt attention by his hearers and was frequently applauded."

The Ottawa *Free Trader* says: "Dr. McCormack delivered one of the most interesting and able talks ever heard in this city on a subject that was not only of value to the profession he represents, but to all classes of people as well. The spacious auditorium of the Baptist Church should have been filled to the doors."

The Joliet *News* says: "Quack doctors, quack preachers and quack medicines were honestly castigated by Dr. McCormack before a large, interested and delighted audience in the Public Library Building."

In Chicago, Dr. McCormack addressed two audiences, one in South Chicago at Bessemer Hall on Friday, April 27, and one at Handel Hall on Saturday, April 28. It is earnestly hoped that the interest manifested and the good accomplished by Dr. McCormack's month in the state will lead to a continuance of these meetings and free discussions on the part of the organized profession and the general public. Every county society should have, at least once a year, and as much oftener as arrangements can be made, a public meeting for the discussion of medical questions of interest to the general public to which the representative citizens of all classes are invited.

THE CHICAGO TUBERCULOSIS EXHIBITION AND THE WESTERN TUBERCULOSIS CONFERENCE.

Great credit is due to the Chicago Tuberculosis Institute and the Illinois State Association for the Prevention of Tuberculosis and to no small extent also to the Municipal Museum of Chicago, for having brought to the West the exhibition collected by the National Association for the Study and Prevention of Tuberculosis. In no other city has the exhibition created such deep interest and brought together so many people from the city and the surrounding country and especially those actively working in this case, eager to learn and to discuss the various phases and requirements of the problem. President James of the Illinois State Tuberculosis Association, last year appealed for a unanimous backing from the entire community in this great question of disease and health. The attendance and the interest in the exhibition and its conferences showed that this appeal is nearing, more and more, its fulfillment in this part of the country.

The exhibition was housed in the rooms of the Municipal Museum in the Public Library building, one room being set aside for the conferences and daily lectures. An excellent pathological exhibition, arranged by Dr. Zeit, was added to the original collection from local exhibitors, principally Rush Medical College, Northwestern University Medical School and College of Physicians and Surgeons. The grouping and arrangements of the exhibits were admirably carried out, so that the visitor could, in logical sequence, instruct himself in regard to "the cause, nature and effects of tuberculosis" and also about the most modern methods employed throughout the world for its prevention and cure. Things that had a somewhat vague meaning in the minds of the people and the physicians took concrete form through this objective representation and there is no doubt that nothing could have better brought home to the visitor the real meaning of tuberculosis with a message of hope for its ultimate eradication.

Three groups of exhibits attracted the most distinct attention; the pathological specimens, the appliances for out-door treatment and the graphic representations of the local distribution of the disease. To one familiar with the tremendous strides made in the last few years in this country for sanatorium provision, the exhibition proved a great revelation. Where a few years ago practically nothing was done, these exhibits of the Sanatoria at Rutland and Sharon, Mass., of Liberty and Stonywold and Saranac, N. Y., of the Maine State Sanatorium, of the Agnes Memorial Sanatorium, at Denver, Colo., and numbers of others, gave evidence of great activity in this direction. And although a comparison with the sanatorium movement, illustrated from other countries, notably Germany, France and Switzerland, shows them still considerably in the lead, there could not be any doubt in the minds of the visitors that very material headway had been made in this country.

As typically American might be designated those exhibits illustrating the cheaper, more temporary appliances for out-door treatment. While this feature was entirely missing in the exhibition held last year in Paris, in conjunction with the International Congress, here it took a most prominent place and very rightly so. In a problem of such magnitude, the

extent of curative efforts is naturally limited by the expenditures necessary and it is evident that if cheapness and effectiveness of the appliances can be combined, a much wider range of useful activity can be assured. Shack's, lean-tos and tents were the principal representatives of this group. Of the first two the Loomis Sanatorium Lean-to, with its out-door sleeping shelter and its attached, heatable dressing room; of the last, the tent of the Ottawa Colony, might be regarded as typical representatives. It was interesting to note how completely the shack has taken the place of the tent in the East, while here in the West we still persistently cling to it. The exhibition will probably help much towards settling the dispute about the relative merits of these two important appliances.

Among the exhibits illustrating investigations of the prevalence of tuberculosis in certain cities, the one of the New York Health Department gave particular evidence of a useful and efficient activity, which might well serve as a model anywhere. Its system of reporting, recording and investigating cases of tuberculosis, its methods in dispensary and hospital provision and the energetic enforcement of laws dealing with this subject, so well illustrated in this exhibition, has made the tuberculosis work of that Department a model for the whole world. One can only hope that the opportunity for study of these methods on the spot has been utilized by our own authorities for the benefit of our committees. All other similar efforts shown at the exhibition have originated from private initiative, mostly co-operating with municipal authorities. Prominent among these were the exhibits of the Boston Association for the Relief and Control of Tuberculosis, the Tuberculosis Committee of the Charity Organization Society of New York, the Henry Phipps Institute, of Philadelphia, the Consumers League, of New York, etc.

Particularly gratifying to our local pride was the interest shown in the exhibits of the Chicago Tuberculosis Institute and the Illinois State Association. The former's work, inaugurated by the Visiting Nurse Association and now carried on independently, though with their co-operation, was illustrated by pin-maps, showing the distribution of tuberculosis in the various wards of Chicago. These showed, for certain wards, a rate of tuberculosis considerably higher than that for the whole city, or for other cities of equal population. In one ward, with a population of nearly 50,000 inhabitants, it was shown to be about three times higher, thus showing very graphically the grouping of great numbers of cases in certain districts. The dependency of this fact on the various social conditions, can be studied from the records of the Institute, at any moment, with great accuracy and the system by which this is accomplished was much admired and flatteringly commented on by the visitors. The lecture service and other educational efforts of the Institute were also shown by exhibits and the great number of lantern slides shown at the conferences, illustrating all phases of the subject by pictures from this country and abroad, was evidence of a local activity, completely ignored by many heretofore. Great interest was evidenced in the plans for a dispensary of the institute, for which the land has already been donated and funds are being collected. Its provisions, not only for medical dispensary treatment in properly equipped rooms, but also for direct material relief through a diet and milk kitchen and a

roofgarden-school for children of consumptive parentage, will give it the unique and novel position of a medical neighborhood settlement.

The work of the Illinois State Tuberculosis Association, although not much older than one year, was illustrated especially by a graphic demonstration of its radius of activity throughout the state through the organization of affiliated local societies. One found there the educational reading matter which the association prints for distribution by the affiliated societies and also the plans for a state sanatorium, proposed by the legislature and which, after passing both houses, was vetoed by Governor Deneen. Next session better success is to be expected.

The educational influence of the exhibition was very considerably enhanced by the conferences and lectures held at the same time. Six conferences and daily afternoon lectures were given before large audiences, indeed so great was the interest in the conferences that the room provided was wholly inadequate. The conference hall was suitably decorated. Behind the platform hung the white banner with the international tuberculosis cross with its two horizontal bars and around the wall hung mottoes, the most striking of which were: "It is in the power of man that all parasitic diseases disappear from the world" (Pasteur), "Give him air, he'll straight be well" (Shakespeare), "Prevention is better than cure and far cheaper" (John Locke), etc. The formal opening conference, presided over by Dr. Frank Billings, was an occasion which will always remain memorable in the minds of those present. For the first time, the highest civic officials, the most eminent physicians, the learned academicians and the practical social workers met in this part of the country, all, by their words, showing how thoroughly awake they were to the necessity of active co-operation of their respective forces for the one purpose, the eradication of tuberculosis. Their addresses showed this not as a medical problem only, but as a social one, which to be done away with, needed a mobilisation of all social forces. Governor Deneen; Health Commissioner Whalen; Dr. George W. Webster, President of the State Board of Health; Miss Jane Addams; Professor Charles Henderson, of the University of Chicago; Drs. Cigrand and Mix all commenting on the great value of the exhibition, made eloquent pleas for further activity and coöperation.

The second conference presided over by Dr. H. B. Favill, dealt with the subject of the out-door treatment of tuberculosis. Drs. Evans, Pettit, Gray and Miss Harriet Fulmer were the speakers. The great importance of an out-door life for tuberculous patients and those predisposed to the disease was emphasized, and it was particularly significant that a warning note was sounded against exaggerations and fadishness and the indiscriminate use or abuse of this most valuable method by those unfamiliar with its effects. Concrete plans for the proper carrying out of out-door treatment were presented by the speakers, Dr. Pettit describing his tent colony at Ottawa, Miss Fulmer and Dr. Sachs announcing the completed arrangements for a tent camp near Chicago for the consumptive patients of the Visiting Nurse Association and Dr. Gray speaking of the roof-garden school of the dispensary of the Chicago Tuberculosis Institute. Far-away climates as such did not receive any recommendation, Illinois air apparently having finally conquered the unanimous approval. How different from a few years ago!

The third conference, under the presidency of Prof. Graham Taylor, was devoted to the discussion of the very important relationship of "Tuberculosis and the Industrial Workers." Dr. Alice Hamilton, of Hull House, gave an admirable exposé of the subject, showing statistically how very prominent was the share of loss to the industrial workers through tuberculosis. Mr. George W. Perkins, the president of the Cigarmakers Union, gave a most graphic and accurate description of the situation among this particular class of workers, showing distinctly how necessary were preventive efforts. Dr. A. C. Klebs showed the preventive methods employed in other countries by industrial workers against this disease, eulogizing especially the measures made possible through the system of obligatory workingmens' insurance in Germany and through coöoperation of benefit societies in England and France. Dr. Caroline Hedger, and Mr. Bisno, of the Garment Workers, also emphasized the views of the other speakers from the standpoint of their experiences.

The fourth conference, under the chairmanship of Mr. C. S. Kingsley, of the Relief and Aid Society, dealt with the subject of "Charity Organization and Tuberculosis." The question of lodging-house infection and institutional provision for consumptives was discussed by the speakers. The insanitary condition of Chicago lodging houses was again censured, as well as the total inadequacy of institutional provision and the great necessity for activity in these directions. Mr. Bicknell, of the Bureau of Charities; Mr. Mullenbach, of the Municipal Lodging House; Mr. Riddle, of Hull House; Dr. Podstata, superintendent of the Cook County Institutions of Dunning, and Mr. Ball, of the City Homes Association, were the principal speakers.

The fifth conference, on "School and Tuberculosis," presided over by Mr. Cooley, the superintendent of schools, brought out expressions of interesting opinions from teachers present in the audience. Rev. R. A. White, of the Board of Education; Miss Fulmer, Drs. Churchill and Ryerson and Miss Jane Addams were the speakers, all insisting unanimously on the great importance of hygiene and sanitation for children at school age, as a powerful means of tuberculosis prevention. The insufficiency of artificial systems of ventilation and the objectionable methods of cleaning of school rooms in Chicago, were forcibly brought out. Also the necessity of providing for tuberculous children and teachers, who are to be excluded hereafter from Chicago schools. In this direction, attention was called by Miss Addams to the system of out-door schools, so-called forest schools in vogue in Germany, which had done a great amount of good to such children. Lantern slides illustrated scenes from such schools and created much interest.

The first two weeks of the exhibition found a fitting termination in the *Western Tuberculosis Conference,* held at Handel Hall, on April 14th, under the auspices of the Chicago Medical Society. Dr. C. S. Bacon, of this society, opened the conference, introducing the acting president, Dr. H. B. Favill. On the platform were seated, besides the president and the guests of honor, Drs. Flick, of Philadelphia and Knopf, of New York, the principal representatives of anti-tuberculosis work in Chicago, Illinois and the neighboring states. Among these out-of-town guests were Drs. Bracken, of Minneapolis, Hurty, of Indian-

apolis, Kime, of Fort Dodge, Iowa, Lowman, of Cleveland, Miller and Eckhard, of Peoria, Porter, of St. Louis, Probst, Warner and Grant, of Columbus, Stoddard, Seaman and Schmitt, of Milwaukee. Dr. L. F. Flick, the acting president of the National Association for the Study and Prevention of Tuberculosis, gave a very forceful invitation to all those in the West working in tuberculosis to join the ranks of the National Association, which represented the best and highest endeavors in this country in this common cause. Dr. S. A. Knopf, so well known through his writings on the subject, in a brilliant address, carried away the audience in a storm of applause. His forceful arraignment of the patent-medicine evil, of alcoholism, of all the bad and dirty habits in the home and on the streets, as causes of this disease, were portrayed in vivid words.

After short speeches and discussion by the other visitors, certain resolutions were adopted unanimously and it may be hoped that they will serve as a guidance in future efforts. The resolutions adopted were:

Resolved, That it is the sense of this conference that in the erection of state sanatoria, the greatest economy and simplicity possible should be followed in construction, consistent with the proper treatment of patients and its function as an educational institution.

Resolved, That there should be an active working organization in every county and city for the purpose of making effective a co-operation of all civic and social forces that can avail against tuberculosis.

Whereas, It is believed that the present conference has encouraged the public interest in the subject of tuberculosis and is expected to assist materially in the eradication of this disease, be it

Resolved, That the chair appoint a committee of five (5), with power to make arrangements for another conference to be held next year at a place easily accessible to those residing in the middle west.

Resolved, That this committee be instructed to prepare a program and make all necessary arrangements for the next conference, and that it be given power to select additional members to assist in its work.

Resolved, That said committee of five, to be appointed by the chair, shall consist of members of the National Association for the Study and Prevention of Tuberculosis.

Resolved, That this conference be known as the "Western Tuberculosis Conference."

As members of the committee provided by this last resolution the chair appointed the following: Drs. Bracken, Kime, Lowman, Porter, Klebs.* St. Paul and Cleveland have already spoken for the next conference.

The last two weeks of the exhibition were utilized to give associations a chance to acquaint themselves thoroughly with the exhibits. There were special nurses', students' and labor organization days and also two conferences for the discussion of topics of particular interest and importance to physicians. The first, presided over by Dr. R. H. Babcock, took up the subject of early recognition of the disease, Drs. Klebs, Walls, Davis and Holmes participating. The last conference, under Dr. N. S. Davis, defined the duties of the practitioner in regard to tuberculosis, with Drs. Preble, Quine and Babcock as speakers. A. C. K.

* All those interested in the success of the next conference are requested to make suggestions to and correspond with the chairman, Dr. H. M. Bracken, Minneapolis, Minn., and the other members of the committee.

COUNTY AND DISTRICT SOCIETIES

ADAMS COUNTY.

The regular monthly and annual meeting of the Adams County Medical Society was held April 9 at 11 a. m. in Quincy, with President John H. Koch in the chair. Those present were Drs. Ashton, Bates, Ericson, Grimes, Gilliland, Knox, Koch, Kidd, Harrison, Lierle, Nickerson, Pfeiffer, Robbins, Rice, Rosenthal, G. B. Shawgo, K. Shawgo, Wells, W. W. Williams, J. G. Williams and Markey. The following officers were elected for the ensuing year: President, J. M. Grimes, Camp Point; first vice-president, H. Hart, Quincy; second vice-president, L. B. Ashton, Quincy; treasurer, R. J. Christie, Jr., Quincy; secretary, George E. Rosenthal, Quincy; censors, Joseph Robbins, G. H. Rice, E. B. Montgomery, Quincy.

In the evening Dr. J. N. McCormack, of Kentucky, gave a popular lecture at Turner Hall, which was well attended. Responses were made by prominent citizens. At 10:30 p. m. Dr. McCormack addressed the profession and much enthusiasm was manifested along lines tending toward betterment of conditions among the profession. A committee was appointed to organize joint meetings with various workers and to undertake the establishment of postgraduate work. A rising vote of thanks was tendered Dr. McCormack and Dr. Norbury, of Jacksonville, who accompanied him. GEORGE E. ROSENTHAL, *Secretary.*

CASS COUNTY.

The regular meeting of the Cass County Medical Society was held in Virginia on the afternoon of April 10. Owing to the absence of President Franken, Dr. C. M. Hubbard, first vice-president, occupied the chair. Members present were Drs. George Bly, Palmer, Schweer, Garm, Soule, Huston, Hubbard, Lyle, McGee, Glenn, Gailey. The business matters of the society were hurriedly passed over owing to the fact that Dr. J. N. McCormack was to address the society. This being our annual meeting, the election of officers resulted as follows: Dr. C. M. Hubbard, Virginia, president; Dr. D. L. Gailey, Ashland, vice-president; Dr. J. A. McGee, Virginia, secretary; Dr. A. R. Lyle, Virginia, treasurer; Drs. George Bly, Beardstown, and J. A. Glenn, Ashland, delegates to the state meeting, with Drs. M. J. Palmer and R. H. Garm, Beardstown, alternates. The treasurer's report was read, showing the amount of $21.47 on hand at present time. Our society is growing, having received three new members within the last year, making a total of twenty-two members out of thirty-one physicians in Cass County.

Dr. McCormack's address was terse, full of good advice and to the point. Among his remarks he advocated the formation of county postgraduate schools, which seemed to meet the approval of all physicians present and which will, perhaps, be acted upon in this county. A fair number of laymen were present and went away feeling repaid for their time in coming to listen to this noted man. Dr. McCormack is certainly doing a splendid work, and if more of the people could hear him there is no doubt but a better understanding would be established between the physicians and the people in general. J. A. MCGEE, *Secretary.*

CHICAGO MEDICAL SOCIETY.

A joint meeting of the Chicago Laryngological and Otological Society and the Chicago Medical Society was held March 7, 1906, with Dr. Otto T. Freer in the chair. Dr. John G. Wilson, University of Chicago, read a paper entitled "Some Anatomic and Physiologic Considerations with Reference to the Faucial Tonsil."

SOME POINTS ON THE ANATOMY AND PHYSIOLOGY OF THE TONSIL.

DR. J. GORDON WILSON,
CHICAGO.

(*Abstract.*)

The palatine tonsils are part of a ring of lymph follicles and lymphatic vessels which surround the pharynx, called "Waldeyer's ring." This ring consists not only of well-defined masses surrounded by a connective tissue capsule, as seen in the pharyngeal tonsil and the faucial tonsil, but also of more or less irregular masses, as in the soft palate, and of continuous layers, as at the base of the tongue and round the tube. The normal size of the faucial tonsil is difficult to estimate, owing to the frequency of inflammation in it. A fair average might be: length, 20 mm.; breadth, 18 mm.; thickness, 13 mm. The tonsil reaches maturity about the fifth year. It is covered by a capsule of connective tissue which is on an average about 1 mm. thick. In enlargement of the tonsils it has been demonstrated that the connective tissue capsule does not relatively thicken. In man the blood supply comes from the facial, either through a tonsillar artery or through the tonsillar branch of the ascending palatine. Branches from the lingual go to the pillars of the fauces and to the plica triangularis. A branch of the descending palatine lies in the soft palate near the supratonsillar fossa.

The tonsillar artery lies between the internal pterygoid muscle and the pharynx in the pterygo-pharyngeal space. This space is of irregular conical form and contains loose, fatty areolar tissue. The relation of the external and internal carotid arteries to this space renders it impossible to injure them in tonsillar operations. The semi-fluid fat in this space easily enables the operator to pull forward the tonsil so that these arteries are still further removed from chances of injury. Hemorrhage most often comes from the tonsillar artery, but may also come from branches of the lingual.

There is evidence to show that the tonsil can not be classed as a residual organ. The physiologic function of the tonsil is associated with the active processes at the upper end of the alimentary tract, one of which may well be to act as a defensive barrier to microörganisms.

Dr. William E. Casselberry read a paper entitled "The Indications for Operative Interference in Disease of the Faucial Tonsils and the Methods of Choice in Operating."

THE INDICATIONS FOR SURGICAL INTERFERENCE IN DISEASE OF THE FAUCIAL TONSILS AND THE METHODS OF CHOICE IN OPERATING—AN ANALYSIS OF 480 CASES.

W. E. CASSELBERRY, M.D.

Professor of Laryngology and Rhinology in Northwestern University Medical School; Laryngologist to St. Luke's and Wesley Hospitals.
CHICAGO.

The indications for surgical interference in disease of the faucial tonsils are both systemic and local. In certain types of "rheumatism," endocarditis, nephritis and phlebitis, clinical observation indicates that the tonsils serve as portals of infection. Recently three cases of serious endocarditis, in which the initial lesion was an acute tonsillitis, have passed under my notice, and these were children maimed for life by the resulting valvular defects. Nephritis I have repeatedly observed to follow tonsillitis, and, while it is usually temporary, I recall one instance in particular, the youthful son of a prominent physician, in whom the albuminuria with casts persisted for years. My mention of phlebitis is based on a single case, a robust man, who, after an acute inflammation of the tonsils and without other cause, was affected by an obstructive inflammation of the saphenous vein, which was ascribed with such conviction by his physicians to the initial infection in the throat that he applied for a tonsillectomy. In none of these cases were the tonsils greatly enlarged, although they may be so; many of them fall

under the now familiar designation, "small but diseased tonsils," while in rare instances there is no chronic structural change apparent.

Acute articular rheumatism[1] is difficult to differentiate from arthritis of the type known to follow such acute infectious diseases as scarlet fever, smallpox, pneumonia, etc. Most of the cases of so-called "rheumatism" following tonsillitis doubtless belong to this class of secondary arthritis. To exemplify this group I will mention briefly the case of a lad whose tonsils were much hypertrophied and contained multiple puriform foci. Attacks of polyarthritis, supposedly "rheumatism," usually followed the attacks of acute tonsillitis, the patient in consequence being a chronic invalid. Tonsillectomy suspended promptly and permanently both the tonsillitis and the secondary arthritis.

This and other clinical evidence is confirmed by the studies of Goodale,[2] who found, in about one-third of the cases of tonsillitis, minute intrafollicular abscesses. In certain specimens it was possible, microscopically, to trace the polynuclear leucocytes as they wandered from these little abscesses along the lymph channels to the tonsil base. He quotes Pirera[3] as having traced in animal experiments pathogenic germs, thence to the adjacent cervical glands. Jonathan Wright, while denying that Nature's conditions of infection and immunity can be thus paralleled in the laboratory, still concedes the main fact, from his clinical, and microscopic[5] evidence, that pathogenic bacteria are absorbed through the tonsillar epithelium.

Acute tonsillitis itself is a sufficient evil; it impairs a child's vigor, retards development and interrupts its studies. An attack now and then may be disregarded, but frequently recurrent tonsillitis, especially in view of possible complications, I regard as an indication for tonsillectomy. Usually the tonsils are at the same time otherwise diseased.

Of the systemic infections the gravest of all with respect to the tonsils is tuberculosis. Their crypts are points of inferior resistance to tubercle bacilli, for the reason that here the epithelium has little coherence[6] and the further defense inherent to protoplasm proves inadequate. They pass with the current into the tonsillar lymph spaces, where most of the bacilli themselves disappear from microscopic view, having first produced characteristic histologic tubercles, but no lesions visible to the naked eye. I have rarely seen, clinically, tuberculosis of the tonsils, yet Wood's[7] postmortem pathologic diagnoses show that in 69 per cent. of advanced cases of pulmonary tuberculosis the tonsils are tuberculous, and that in 5 per cent. of apparently simple hypertrophy of tonsils and adenoids the excised specimens are tuberculous. However, that enough tubercle bacilli can succeed in passing through the tonsils to infect the cervical glands has been proven by George B. Wood[8] with domestic pigs, which were killed from twenty to forty days after swabbing of the tonsils with a culture. His specimens, which I have had opportunity personally to examine, are very convincing, not only of the course of the infection from the tonsils to the cervical glands, but thence also through the system.

Simple pyogenic cervical adenitis and tuberculosis of the cervical lymphatic glands are so related that they are necessarily considered together. Pyogenic infection transmitted from the tonsils is the most prolific primary cause of glandular hyperplasia. With amelioration of the tonsillar inflammation the lymphatic glandular enlargement subsides, but not wholly, as it is prone to be still worse with the next attack. If now, before the glandular enlargement becomes permanently established, the tonsils be excised, the cervical adenitis will in time wholly disappear. In illustration of this type of simple pyogenic adenitis I may cite the

1. Barstow: Ref. Handbook Med. Sciences, New Ed., 1893.
2. Goodale: Trans. of Am. Laryn. Assoc., 1902.
3. Pirera: Archiv. Ital. di Laryngol., April, 1900 Trans. Sec. Laryn. Am. Med. Assoc., 1904, p. 210 (Wood).
4. Jonathan Wright: New York Medical Journal, Jan. 6, 1906, Reprint p. 2.
5. Jonathan Wright: Loc. cit. Reprint p. 12.
6. Goodale: Archiv. für Laryn. and Rhinol., 1897, vol. vii, p. 90.
7. George B. Wood, Jour. Am. Med. Assoc., 1904. Section of Laryngol. and Otol. Trans. p. 212.
8. Loc. cit.

case of Miss D., aged 14, daughter of a physician, whose glandular enlargement receded promptly after tonsillectomy and disappeared entirely in the course of a year. If, however, the cervical glandular enlargement has become persistent it is probable that a tuberculous infection has been added to the pyogenic hyperplasia or else it has been tuberculous from the start. The two infections coexist more or less. It favors recovery as well as prophylaxis to act upon the theory that continued pyogenic invasion from the tonsils predisposes the cervical lymphatic glands to tuberculosis, as even in the tuberculous type the swellings usually diminish after tonsillectomy, although more slowly and not often completely. These opinions, based upon personal clinical records, are supported in the main by Nichol,[9] whose investigation embraced 500 cases of cervical adenitis, mostly operated in the Royal Hospital for Children. Further, he estimates the proportion of pyogenic to tuberculous cases as two to three. For these reasons one must regard cervical adenitis, in any degree approaching persistency, as an indication for immediate tonsillectomy.

Another indication for surgical interference is the systemic toxemia which may result from the putrefaction of accumulated débris in the crypts of the tonsil. The symptoms are not very definite, a pallid, muddy or blemished complexion, impairment of health and strength and dyspeptic complaints being so general that when due to this cause it is apt to be only through the patient's own intuition, as suggested by a nauseating odor and taste, that the fact is first suspected. Confirmation is established, in reasonable numbers, through disappearance of the symptoms after tonsillectomy, the size, depth and high degree of fetidness of the concretions thus disclosed being sometimes amazing.

Tonsillar concretions, moreover, are responsible for much local discomfort in the throat. The "submerged tonsil," the "small but diseased tonsil" and the hidden "velar lobe" of the tonsil are all descriptive of conditions which impede the drainage of the crypts. The mysteries of chronic pharyngitis, of red and sensitive faucial pillars and peritonsillar abscess are dispelled when during retraction by a hook of the covering plica triangularis and muscular anterior pillar cheesy concretions are forced into view from previously hidden, inverted or constricted crypts.

To meet most of these indications effectively, experience teaches that the excision must be reasonably thorough, else in the stumps tonsillitis is liable to recur, concretions still to form or hypertrophy to redevelop. The adoption of tonsillectomy as the ideal operation, even though this ideal be not always exactly fulfilled, lends more importance to the inquiry with respect to the protective and other functions of the tonsils. The tonsillar crypts always contain pathogenic germs against which Nature seeks to provide by phagocytosis, the engaging polynuclear neutrophiles, however, coming not from the lymphoid tissue,[10] *per se*, but from the blood, so that this is a protection only against the evil of the tonsils themselves. More stress is now laid upon the bactericidal[11] properties of the juice of lymphoid glands and upon the vasotonic effects of an internal secretion,[12] but it will be remembered that aside from the tonsils there are other lymphoid tissues which seemingly are quite adequate to care for these functions. Certain it is that no functional ill effects are discernible from tonsillectomy.

The advancing popularity of the newer term tonsillectomy rather than tonsillotomy is indicative of a general attitude favorable to total excision of the faucial tonsils, and I am convinced that the more nearly we can conform to this ideal, that is, within the limits of expediency and safety, the more satisfactory will be the results. In certain cases complete enucleation is accomplished easily and perhaps more safely than partial abscission, while in others, so irregularly and deeply may the tonsil extend, so infolded by muscular pillars and adherent to fibrous capsule may it be found that to follow it to its ultimate recesses in an effort to remove every fragment will require the highest degree of skill and the best judgment in order to avoid hazard. Close and deep dissection may be required rather than

9. Nichol—Glasgow Med. Jour., Jan. 1896.
10. Goodale: Loc. cit.
11. Jonathan Wright: Jour. of Laryn. and Rhin., 1901, p. 639.
12. Masini.

easy enucleation, and the liability to troublesome hemorrhage is thereby increased.

The methods of choice in operating have reference particularly to the avoidance of hazard, the minimizing of pain and the effectiveness, permanence and harmlessness of the result. In order better to judge, I have scrutinized my records of faucial tonsil operations, which total 480 private cases, most of them double, in many of which opportunities were afforded years after to determine the final condition.

Of children under 14 years of age, operated upon under general anesthesia, there are 165, of whom nine-tenths took ether alone or preceded by a few whiffs of A. C. E. mixture, the ether serving satisfactorily for the operation and without accident or detriment of any sort. Even the usual slight risk of ether anesthesia is probably further lessened by the brevity of this operation.

The present technic is briefly as follows: When well etherized the patient's head and shoulders are raised on the operating table by a firm compact roll, made by winding a pillow endwise into a sheet. The membraneous tense edge of the anterior faucial pillar is then "nicked" near its junction with the velum, which helps to disengage the tonsil, including the velar lobe, from its socket. The writer's simplified plain ring tonsillotome, not too sharp, is adjusted, the tonsil drawn into it by special grasping forceps and shelled out from its capsule rather than cut through; instantly the same instruments are returned again and again for the velar lobe or any other escaping fragments. Blood having gathered, a slight gurgle warns one to lower and turn the patient's head for its escape, this bleeding interval being used to go on with the anesthetic before repeating the same procedure upon the other side.

The other one-tenth of this anesthesia had gas or bromid of ethyl, the suitability of which for modern tonsillectomy is limited to easy cases of the pedunculated type, which do not require prolonged dissection. Of children under 14, but mostly over 10 years of age, operated with local cocain anesthesia, there are 112. A fresh 5 per cent. cocain solution supplemented by adrenalin is applied by repeated spraying, care being taken to direct it by an angular spray tip into the crypts and pillar crevices. Also, to minimize pain, the tonsillotome in this class should be very sharp, but its method of use is the same, and in spite of the patient's disquietude one should quickly search for and excise each and all of the fragments which escape the primary cut. Whether a single or double tonsillectomy is thus made at a sitting and the exact degree of thoroughness attained will depend upon the child's endurance and other circumstances. In these two groups, which aggregate 277 children under 14 years, there has been no case of unusual hemorrhage, although the fact that it might occur sometimes influences me in the unanesthetized cases to operate only one side at a time.

The final results can be compared only in a general way. Acute tonsillitis in certain susceptible persons is liable to recur in the merest remaining trace of tonsillar tissue, but the disease being now mild and infrequent it is unfair to rank it as a regular occurrence. On the other hand, if a third or half the tonsil be left it is prone to grow again and be subject to all the old complaints. Also, if in an operation for the prevention of peritonsillar abscess the velar lobe be overlooked the result will be ineffective.

I have on record final information obtained indirectly from the parents, friends or physicians, or directly by reëxamination, in about two-fifths of the above enumerated operations on children, from which it is estimated that the ratio of recurrences in the ether series is 1.6 and in the cocain series 1.4. These figures favor the anesthetic method; moreover, most of the recurrences having occurred in the cases of an early period, when incomplete tonsillotomy was in vogue, they also argue in favor of modern tonsillectomy. To avoid misapprehension I should state that this ratio does not apply to adenoid growths, which in my experience have very rarely recurred, nor does it mean that actual hypertrophy of the faucial tonsils redeveloped so often, but only that some form of troublesome tonsillar disease again appeared.

I have commented on the total absence of unusual hemorrhage in each of the two series of operations on children under 14 years of age. In contrast, out of 203

operations, mostly double, in adult life seriously troublesome hemorrhage occurred in fourteen, two of which were in persons as young as 15 years. The effort to avoid this contingency has led to a variety of methods in operating on adults, no one of which is universally suitable. In recent years I have given first consideration to the cold-wire snare, regarding it as a method of comparative, although not perfect, safety. One needs usually to expose the tonsillar base by preliminary shallow incisions above and below, thus preparing a place for the No. 6 wire loop, by which the bulk of the excision is made. Any fragments which escape the snare are at once grasped by a dull-edged crushing forceps and further detached by scissors. The author's snare, as perfected for this purpose, can be manipulated by one hand, has strength without clumsiness and is suitable also for nasal use. As general anesthesia is not used in adults unless demanded by the patient, the method by the cold snare has proven painful in spite of cocain, so that in the selection of cases regard must be paid to their fortitude, which explains why in this series of 203 private adult patients I have recorded its use in only sixteen. The cautery snare, which was earlier employed in an equal number, I now seldom use, and "cautery dissection" never appealed to me, although it has its earnest advocates. Of the fourteen hemorrhages mentioned, one was a cautery-snare case, three were incident to fragmental dissection and ten followed the use of the tonsillotome. None resulted from the cold snare nor has any occurred from it as yet in the additional cold-snare cases in my clinic.

I give second consideration to what I will term the fragmental method, "morcellement" of the French. One or more fragments are excised at a sitting by means of scissors or tonsil punch, completion being reached in several sittings. Naturally, the forty-eight cases which compose this group include chiefly those of "small but diseased tonsils." Seven cases of recurrent peritonsillar abscess were thus remedied, the method being especially adapted for cautious excision of the velar lobe, while out of ten additional cases of peritonsillar abscess operated otherwise two suffered recurrence. In the three hemorrhage cases which arose out of the forty-eight subjected to the fragmental method, the spurting vessels were the more readily controlled by reason of the limited field of operation.

The tonsillotome as a method of choice for adults I long since relegated to third place, hence it is a little surprising to find from my records that as many as 122 out of 203 adults were operated by means of it. Some, though classed as adults, were just out of childhood, while in others the tonsils still retained a youthful softness of texture. Often the alternative was presented of doing it in this quick familiar manner or not at all; indeed, the tonsillotome may be selected merely as a matter of expediency, provided one has at hand the best hemostatic appliances and feels competent to cope with a serious hemorrhage, should it occur, as in fact it did in ten out of the 122, or, to state the ratio in terms of single tonsils, 1:25.

In conclusion it may not be superfluous to state that in no instance has any ultimate harm resulted from the operation—nothing but good. Lambert Lack[13] reports a case of loss of singing voice. My series includes but eight vocalists and perhaps an equal number of public speakers, in all of whom the voice was improved, but the number would be larger were it not that in singers I have limited the operation to those in whom the tonsillar disease itself seemed about to destroy the voice, so I believe that vocalists form no exception to the rule that wherever the tonsillectomy is really indicated enhanced general vigor and vocal sturdiness may be expected to result from the operation.

Before these papers were discussed Dr. J. Holinger asked permission to present two patients, both of whom had been operated on for thrombo-phlebitis of the lateral and sigmoid sinus. In the first case, a boy of 5 years, the suppurative process progressed downward to the jugular bulb and vein, which were opened. The facial nerve was injured, as is hardly avoidable in these cases. The boy had three distinct septic embolisms of the lungs from the thrombo-phlebitis of the

13. Lambert Lack: Jour. of Laryn. and Rhinol., 1901, p. 600.

jugular vein and jugular bulb, with fever, pleuritis exudation and coma. Each time he recovered.

The second case, a boy of 12, showed the opposite progress of suppuration of the thrombo-phlebitis, that is, backward in the course of the sinus toward the occiput. The cases were so clear that without any further explanation the members wer invited to examine the patients.

DISCUSSION ON THE PAPERS OF DRS. WILSON AND CASSELBERRY.

Dr. Arthur M. Corwin:—The adenoid tissue included between the pillars of the fauces on each side, which we call the faucial tonsil, should be in prominence little more than several thicknesses of ordinary mucous membrane; normally it should not project as a rounded body. When it does it is abnormal, and the fact that a large majority of people are abnormal in this regard is attested by the presence in varying degree of more than this almost invisible deposit of adenoid tissue. But to say that we should remove all tonsils simply because they are visible or even moderately enlarged is an exaggeration. We should no more think of doing that than of cutting off every spur or reducing every trivial deflection of the nasal septum.

The indications, as I see them, for an operation on the tonsil by one of the many methods in vogue would seem to fall under four heads. In the first place we operate on tonsils by whatever method we select when there is a history in the case, whether it be a child or adult, of acute inflammation; whether the inflammation is of the type of the ordinary follicular tonsillitis, which is a grave disease with its sequel of paratonsillar abscess and dangers of systemic invasion, or whether the inflammation takes a more mild type, frequent, periodic or occasional, of what is little more than a catarrhal inflammation, superficial in its character, without exudate, without follicular involvement and with little enlargement. We all see many such cases. In all such instances the indication is plainly to destroy the seat of disease, the tonsil.

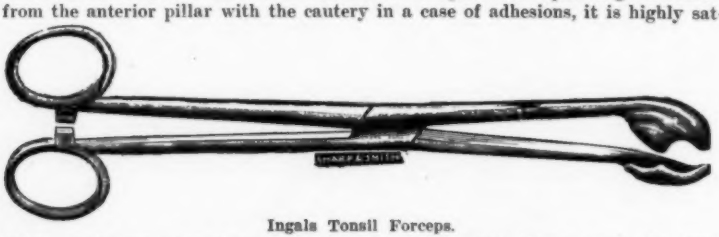
The second indication for operating upon tonsils would be some mechanical obstruction to voice production, as in singers, in students of the voice, in public speakers and in children who have a throaty, stuffy voice, even without inflammatory trouble or adenoids, the faucial tonsils simply being larger or smaller and mechanically interfering with phonation.

The third indication for interference is based upon a patient's complaint of bad breath or disagreeable taste, or both. How often have we had young ladies come to us with this symptom—foul breath periodically, or most of the time, chiefly periodically. We have carefully inspected the nose, reduced the swelling by cocain and adrenalin to facilitate inspection, in order to eliminate any possible localization of decomposing secretion or caries and to eliminate also the purulent discharges from the various sinuses. We have inspected carefully the vault of the pharynx. As we all know, there are cases of chronic and persistent accumulations of secretion in this region, which may come away in a lump and may be the source of more or less odor. We have inspected the teeth, the alveolar process, and we have explored the lower respiratory tract to rule out in certain selected cases the presence of bronchiectasis or other bronchial or pulmonary causes of foul breath. We have inquired carefully into the digestive tract; we have excluded the heavily coated tongue as the seat of odor, whether it be the result of digestive trouble, or due to mouth breathing from nasal stenosis, and we have turned our batteries upon the tonsil, not necessarily the large and prominent tonsil, full of follicular openings, but we have made the hidden and seemingly insignificant tonsil look us squarely in the face, so to speak, as in turning it out of its own bed by pressing firmly with the tongue depressor in front of the tonsil while the patient gagged; or we have retracted the anterior pillar with a blunt hook of aluminum wire. We have in this manner, possibly in the case of a small tonsil, found no follicular involvement. In the absence of such cryptic localization, the deep fossa, referred to in the paper, in front of the tonsil may be at fault, is the seat of decomposing or purulent secretion, and this we find by passing into it a probe or even the right-angle tip of the atomizer.

And under the circumstances these can be best attacked, not by tonsillotome, not by cutting instruments, although each operator has his choice in these matters, but preferably by the galvano-cautery, rightly used.

Lastly, we operate on tonsils because of the danger of infection through them. This is especially true in children, whose adenoid tissue is so succulent and vulnerable; but it also applies to medical students, doctors and nurses. No doctor, nurse or medical student should overlook his tonsils as being portals of entry which will subject him to unusual danger. As the tonsil becomes older and more fibrous, the danger becomes less, but correspondingly more from hemorrhage in case of operation.

With regard to the method of operating, the cautery, in later years, has become more popular with some of us, and is very effective when rightly used. The one rule I seek to apply in using the cautery is not to burn the pillars or the underlying muscular structure surrounding the tonsil. If we do that we not only cause a greater reaction, but greater pain, for every time the burnt muscle is stretched there is immense discomfort. Furthermore, if we burn the muscles we will have scar tissue, which will lessen their flexibility and invite deformity. In order to avoid this I retract the anterior pillar with a blunt hook. The tonsil may then be fairly enucleated with the cautery, or slit up repeatedly from above downward, and the cul-de-sac laid wide open. In separating the tonsil from the anterior pillar with the cautery in a case of adhesions, it is highly sat-



Ingals Tonsil Forceps.

isfactory to leave the sixteenth of an inch of adenoid tissue along the inner posterior surface of the anterior pillar, which subsequently contracts, but which allows the muscle to go unscathed.

I am very fond of the use of the cautery, even in very greatly hypertrophied cases. Allow me, finally, to speak briefly of an operation with which you are all more or less familiar, namely, the Ingals operation for the removal of the tonsil by the snare. It is an operation that I would like to dilate on for a considerable time, not because I happen to have been reared in the Ingals school of our specialty, and my foundations were laid there, not because the procedure has some man's name tied to it, but because I have found this operation, when compared with many other surgical measures, most satisfactory. It fills the bill perfectly in children; it delivers the goods to the best advantage in some adults. The patient is put under chloroform or some other anesthetic, the gag inserted with a light, whether reflected or not; the anterior and posterior pillars are separated by a proper instrument, and this instrument, the Ingals tonsil forceps, is applied from above downward, and compresses the tonsil between these blades.

A cold wire snare, threaded with No. 5 steel piano wire, is then slid over the locked handles of the forceps and the tonsil is cut off, the loop of the snare being contracted by the milled wheel. The child is on its side, with head over the table, and is shifted from one side to the other, the under tonsil being removed with each change of posture. The adenoids can be removed at the same sitting. Dr. Freer has added to this forceps an additional tooth which has an advantage in a small-sized tonsil, in that it will firmly attach itself without slipping.

Dr. William L. Ballenger:—I shall confine my remarks to a simple statement of a few facts, not attempting to enter into a general discussion of the two very excellent papers. I want to say that during the past four years it has been my endeavor to remove every tonsil with its capsule intact, though I have not been able to do so to my satisfaction until within the last six months. During this

short period I have usually removed the tonsil with its capsule or investing membrane intact. A microscopic examination only can show whether it is actually present or not. I have here a few tonsils I removed in series. They all have the investing membrane intact, or apparently so, except in two instances. The two tonsils were not removed by me, but by another surgeon in this city. I simply have them to compare with those in which the investing capsule is intact. I have made many observations on the tonsils I have removed, and I have found in nearly every instance that the crypts of the tonsil extend to within a millimeter of the depth of the tonsil; hence it is apparent, that unless we remove the tonsil with its investing membrane, we do not remove the deeper portion of the crypts where the chief seat of trouble lies, especially in the supratonsillar fossa. When the tonsillitome is used this portion of the tonsil usually escapes and is left to continue the tonsillar disease. I will pass the tonsils around and you will see the appearance of the tonsil when removed in its entirety. When thus removed, further diseased process is impossible.

The method of removal is simple. The tonsil is dissected from the tonsillar sinus with a small knife. The tonsil during the dissection is seized by a pair of vulsellum forceps, one prong in the supratonsillar space and the other at the inferior aspect of the tonsil. It is then drawn forcibly inward and forward toward the median line, away from the carotid, as shown by Professor Wilson. I did not before fully appreciate the value of such a procedure; I knew it enabled me to dissect the tonsil more easily. By thus pulling it toward the median line and forward, I pull it out of its socket or sinus. A large part of the tonsil lies underneath the anterior pillar, and in the supratonsillar fossa, and by pulling towards the median line it comes from its hiding-place, and its attachments are easily reached with a knife. It only takes a few moments to do the necessary dissecting. I have been able, in favorable cases, where the patients did not gag, to remove the tonsil in a minute, or even less than that time. Ordinarily it takes longer. It is not, however, a long operation. The operations I have performed have been chiefly done under cocain anesthesia. Latterly, I have injected cocain and adrenalin into the pillars at several points, and into the tonsil, and have thus rendered the operation practically a bloodless and painless one. I am not sure that this is a safe method. I have used it in forty or fifty cases without any untoward results. Dr. Moss of San Antonio, Texas, suggested this method to me. He has pursued it for a number of years without a dangerous incident, and I have been following it with equally good results for a brief time. I am fearful, however, of injecting cocain into the tissues.

Anyone who attempts to remove a tonsil in its entirety and succeeds in doing so, in my opinion is on the right road. There is no more reason why a tonsillectomy should not be considered a true surgical procedure than is an appendectomy. We aural and laryngeal surgeons should endeavor to make our operations surgical in character. We should get away from some of the old machine methods (the guillotine) and get down to true surgical principles in operating, and if we do this we will find that our results will be better, and that we will be more respected as surgeons in our line of work. My plea is for the abandonment of "machine surgery" and the adoption of true surgical technique in tonsillar operations.

Dr. Charles M. Robertson:—I would like to say a word or two on these papers. In regard to the different methods of enucleating the tonsil, I will try to illustrate the one I employ. Tonsils should be divided into two classes, the obstructive and the diseased, whether it is a long, flat, small or submerged tonsil. The submerged is the worst tonsil we have to deal with. The obstructive tonsil appears usually in children earlier than Dr. Wilson stated. My experience has taught me that the tonsil appears before the fifth year in a great many cases. I have often seen very large glands in children only a few months old. In fact, we find cases at five years of age with very much enlarged faucial glands. This is the only kind of tonsil, in my opinion, that indicates the tonsillotome. I do not believe tonsillotomy should be practiced in any other class, and then only for the relief of the obstruction to deglutition and respiration.

As regards the enucleation of the gland, it makes no practical difference how we enucleate it. Cautery dissection, dissecting with bistoury, the cold snare, are all good operations. My objection to the snare is that we have to dissect the gland very loose before we can put on the snare, and after we get the gland dissected it is easy to take a snip or two with a pair of shears and get it out without the bother of a snare. My experience teaches me that the snare operation is not always a bloodless one, as often there is serious hemorrhage following its use. The dissection is a little more slow than it ought to be, except in cases where there is no adhesion, or practically none between the pillar and the tonsil itself.

In using these various operations it occurred to me that if I could devise some way by which I could separate the pillar quickly, and introduce scissors to snip out the gland, I would have a model operation. So I have worked on that plan and desire to show you the instruments I use. Many of you are familiar with these instruments. The first instrument is a curved double-edged bistoury, curved on a radius of one centimeter, sharp on both sides, blunt at the end. This is introduced over the tonsil, and just behind the anterior pillar. Where there are no marked adhesions between the gland and pillar, you can tear loose the tonsil from the anterior pillar. In cases in which there are adhesions, where you cannot tear it loose with this bistoury, I have taken a pair of shears that work on the principle of an alligator forceps; they open horizontally. One blade is applied over the tonsil and behind the anterior pillar. I crowd it down behind the anterior pillar, taking great care not to get into the tonsil itself. If one is not careful he will leave that seventeenth of an inch of the tonsil that Dr. Corwin was talking about. After you separate the tonsil its fellow is separated in like manner. In separating the pillars, if you use a general anesthetic and there is hemorrhage, you can wait until the hemorrhage stops. This separating can be done in the first stage of anesthesia. I have used chloroform, never ether, because ether anesthesia takes too long, and my patient is more liable to vomit after it, thereby producing more liability of tearing away the clot and producing more hemorrhage. After the tonsil is separated from the anterior pillar (I pay no attention to the posterior pillar), I try to separate it above from the soft palate. If I do not do this I have trouble in dragging the tonsil down and in.

I have modified the Pynchon grasping forceps. This forceps is just as strong with claw teeth in the form of a double tenaculum. It is locked by a spring lock, so that if the patient should jump or move, or the tonsil is soft and flabby, as it often is, the forceps cannot be pulled off. When I get hold of the tonsil with this instrument I know I have got it for keeps. If I lay down my instrument to get something else, if there is considerable hemorrhage, I know I have got the tonsil on my forceps any time I want it. I have made this instrument in the shape of a double tenaculum, because I have found all other forceps were liable to pull off, and the tonsil would drop down over the larynx, sometimes choking the patient before it could be removed. In grasping the tonsil I take particular pains to get the top of the gland and very well down near the base. I think the results of this operation depend very largely upon how we get hold of the gland. That is the trick or important part of the operation. After I have grasped the tonsil and pulled it well in and down, I fit a pair of shears over it. These are double-pointed shears, and made so that they fit in between the anterior and posterior pillars. You can open the blades wide apart with the least possible motion of the handles. In fitting the tonsil into the shears I make a slight motion with the shears, so that I get the tonsil out into the shears, delivering it by pulling on the forceps and pressing with the shears. Where the gland is high up into the soft tissues you can often deliver it into the shears like an onion, and then peel it out instead of cutting it out.

One of the speakers said that in the punch operation for the removal of a small tonsil there was serious hemorrhage in some cases. We realize that in a small cicatricial stump we have cicatricial or fibrous tissue. Where we take out a small amount of fibrous tissue the vessels in that fibrous tissue are held open like a stove-pipe, because they cannot retract the fibrous tissue holding them open, and we therefore have hemorrhage. With the tonsillotome we will have more

hemorrhage than if we cut the tonsil out completely. In some cases I have found little arteries spurting blood clear across the pharynx. In these cases I grasp the tissue surrounding the vessel, cut it out, so as to get into the areolar tissue beyond the gland. Then the vessel has a chance to retract and bleeding stops.

In regard to the anesthetic, chloroform is dangerous in these cases, because they are all of a lymphatic disposition, and now that we have a new anesthetic in the shape of chlorid of ethyl gas, which is very convenient to use, we give it with safety and do our work quickly. We can give it continuously. Chlorid of ethyl gas is put up in metal tubes, with screw-top; you can introduce it through the nose. Of course, where there are large obstructive tonsils and adenoids, you first have to introduce it through the mouth, and afterward through the nose.

As my time for discussion has expired, I shall be pleased to show my method of ethyl anesthesia at a later time.

Dr. A. H. Andrews:—I want to protest against the inference that tonsillectomy is a simple, easy operation. Tonsillotomy is comparatively easy, but tonsillectomy is neither easy nor simple. Furthermore, I want to speak against one of the older methods of dealing with tonsils, namely, that of putting the cautery electrode in the crypts and then cutting out. I have enucleated a number of tonsils that have been treated in this way, and have found incarcerated cheesy material on the interior of the tonsil which could not get out and which was causing trouble.

Dr. Joseph C. Beck:—I was very much interested in Dr. Casselberry's paper for the particular reason that he alluded to tuberculosis, and recently in reading an article by Groebers, I find that he has advanced a new idea with regard to tubercular infection from the tonsil to the apex of the lungs directly without going through the circulation or the bronchial route. That is certainly an important point, so far as the pathology of the tonsil is concerned. Willimintzky, who has followed Groeber's work in experimenting, by injecting colored material into the tonsil and above the tonsil in animals, found colored particles along the lymphatics, in the lymphatic glands, and down to the apex of the lung into the lung itself, showing us that we may have tubercular infection from the tonsil as a very frequent cause. If that occurs in animals and as shown in some post-mortem examinations that have been made in following tubercular infection in the lymphatics, to the apex of the lung, it proves that the tonsil is an atrium of infection. Rheumatic conditions have been alluded to, but it is most interesting to hear the statistics of many, particularly those of Pribrain, who has found in 80 per cent. of his cases angina and infection of the tonsil, showing how frequently the tonsil is involved in cases of acute articular rheumatism.

So far as the treatment of the tonsil is concerned I have practiced as nearly as possible tonsillectomy. I am pleased with the Robertson scissors and cold snare in adult cases. I use a tonsillotome in children without an anesthetic usually, with an assistant holding the child. In adults, I have also used a different instrument, that is, a heavy ring instrument, a cold écraseur on the order of a tonsillotome-snare as described by Ballenger. It works beautifully, and the tonsil Dr. Ballenger showed you was removed with that instrument.

Dr. Edwin Pynchon:—There has been considerable said about the undesirability of removing tonsils in many cases. I will say that I have been removing them for a good many years, and I acknowledge, at the present time I operate and remove tonsils which in former years I would not have removed, but I do not recall a case wherein I removed a tonsil without getting beneficial results. I have used the various methods that the different speakers have mentioned. I have used the shears. I have been experimenting with shears sufficiently to get up some original shears, different from those of Dr. Robertson or any others I have seen. No method of operating with any of these cutting instruments is bloodless; we get more or less hemorrhage, which obscures the field of vision and increases the difficulty in operating to a considerable degree.

The method of cautery dissection has been touched on by two or three of the speakers, some of whom do not like it. They cannot be expected to like a thing unless they have practiced it. It is the only operation whereby the tonsil can be

removed bloodlessly. I cannot always do it bloodlessly. That I acknowledge. I have, however, on several ocasions removed a tonsil by cautery dissection without the loss of one drop of blood from the wound. Therefore, I am bound to like the operation, because, as I am working in a bloodless field, I can more thoroughly remove the tonsil than if the field is obscured by hemorrhage.

Dr. Clark W. Hawley:—I rise with a good deal of hesitation to say anything on these papers, because I am an oculist rather than a nose and throat man. I want to call your attention to a new anesthetic, somnoform. I believe if you will try it you will like it. I have tried it, and it is the most satisfactory anesthetic I have ever used. You can control the patient until you are through with your work. One of my recent patients was a little child with large polyps in one ear extending clear to the meatus. Some very large tonsils and adenoids had to be removed; I removed them all under somnoform in a most successful manner.

Dr. J. Frank McKinley:—I want to say a word or two with reference to tonsillotomy. I would mention cautery dissection simply to condemn it from what I have seen of it. I have seen it resorted to several times. As to the instruments, I have used nearly all of them that are on the market, and recently have come to use forceps and bistoury. I believe that a tonsil can be removed to the extent of there being only the sixteenth part of an inch left. This I do not hesitate to leave. In removing large fibrous tonsils, if I am likely to encounter hemorrhage, my practice is to swab the surface with sixty grains of nitrate of silver to the ounce, by means of which I usually control the hemorrhage. I have only had one case of hemorrhage in all the operations I have done. With sixty grains of nitrate of silver to the ounce, swabbing the cut surface, I have had no bad results; the hemorrhage has been controlled. The instruments I use are a blunt-pointed bistoury and Casselberry forceps.

Dr. William E. Casselberry:—I wish, first, on behalf of the laryngologists of this city, to thank Professor Wilson for his very beautiful anatomical preparations, which show exactly the arterial supply of the tonsils and the frequent penetration of tissue into capsule and muscle phases, upon which we have all desired explicit information, such as he has furnished us. I sincerely hope we will have the plates incorporated in our published proceedings for future reference. With regard to hemorrhage from the wounding of the pharyngeal artery, I am sure, he did not mean to say that the frequent hemorrhages which give operators so much trouble were from that artery; I am certain that in none of the cases of hemorrhage which I referred to was the ascending pharyngeal artery cut. Unless it occupies an anomalous situation it is too far posteriorly to be cut except by accident, or by a reckless operator. The tonsillar arteries, especially those from the ascending palatine, from the facial, and their muscular twigs, are large enough to bleed copiously in certain subjects. Why they do it in one subject and not in another we do not know. But a similar disparity is common to other parts of the body.

I did not refer to mechanical obstruction as an indication for operating, because, whilst I grant that it is one of the indications with respect to a faucial tonsil, still it belongs especially to the subject of adenoid growths, and I wished to avoid that subject in this paper. With respect to treatment by ignipuncture or galvanocautery puncture, it is, in my opinion, a valuable means, and yet I believe, where it is expedient so to do, it is better to remove the tonsil, or at least that part of the tonsil that is forming the concretions, for the reason that after ignipuncture occurs cicatricial contraction of the orifices and concretions again are formed.

With respect to the different instruments exhibited, any instrument in the hands of a surgeon who is skilled in its use can be employed, hence the question of the particular instrument is not of importance, except with respect to minimizing the danger of hemorrhage.

The choice between anesthetics carries more weight. I again suggest, unless one is inclined to run more risk than is necessary, to avoid chloroform in these

cases. I suggest this for the credit of the operation, and for the credit of the profession, for if you will consult the literature of anesthetic deaths which have taken place from this operation you will find they were chloroform cases. Tonsillar hypertrophy is one manifestation of the habitus lymphaticus in which chloroform is known to be dangerous. Ether is the preferable anesthetic; it is a feasible anesthetic, and it is, I believe, the safest anesthetic for these cases.

Dr. J. Holinger read a paper entitled, "Some Points in the Anatomy of the Temporal Bone to Be Considered in Connection with Mastoiditis Following Acute Suppurative Otitis Media."

Dr. T. M. Hardie followed with a paper on "Indications for Operative Interference in Cases of Mastoiditis Associated with Acute Suppurative Otitis Media."

THE INDICATIONS FOR OPERATIVE INTERFERENCE IN MASTOIDITIS ASSOCIATED WITH ACUTE SUPPURATIVE OTITIS MEDIA.

T. Melville Hardie, M.D.
CHICAGO.

It is difficult to believe that practically all of the life-saving work in ear diseases has been limited to the past thirty-five years. Schwartze's work was published in 1873. Before that time mastoid operations were not performed unless a perforation of the cortex of the bone had taken place with consequent swelling, redness and fluctuation over the mastoid process, and even at the present time it is possible to meet practitioners of medicine who have never observed a case of mastoid inflammation which demanded operation, although they have had patients succumb to one or other of the well-known intracranial or general complications or sequelæ of the disease. It should be possible for every one to decide in a large proportion of cases whether operation is necessary. In the remaining number he can obtain assistance in every city which possesses an oculist and aurist who can use a head mirror and ear speculum as well as he can his ophthalmoscope.

The formulation of rules for the guidance of the inexperienced is always a difficult undertaking, and in this case the difficulty is increased from the fact that the structure of the parts involved and the virulence of the infection are so variable that the symptoms, subjective and objective, vary likewise, even when the pathologic conditions within the bone are similar, and my single suggestion is that if we err at all it should be on the side of safety. One should operate too early rather than too late. We may now proceed to an enumeration and description of the symptoms which demand operation.

1. Pain.—Consider its duration, situation and severity. Pain in the mastoid region is a very common symptom. It is frequently described by the patient as deep, boring, nauseating, usually worse at night. It is often just severe enough to cause sleeplessness. It may have come on with the acute inflammation in the ear, or it may not develop until some days after the ear has begun to discharge, or it may begin only when the previously profuse discharge from the ear has suddenly stopped. Pain on pressure is a very important symptom of mastoid disease, but care must be taken both as to the method of eliciting tenderness and the situation chosen for its early demonstration. It must be remembered that very gentle pressure over an acutely inflamed periosteum might cause excruciating pain, while deep pressure would be required to elicit pain when the inflammation was deeply seated in a bone, the structure of which was dense and compact. Pressure, therefore, with the end of the thumb or forefinger is to be slowly and steadily increased over the antrum, the mastoid tip and the region of the mastoid foramen. When endeavoring to elicit antrum tenderness the pressure is to be made just behind the auricular attachment and upward and backward from the external canal. Care must be taken if there is any question as to the coexistence of mastoid disease and furuncle of the external meatus that neither the ear nor the cartilaginous meatus is moved. When examining the tip be sure to compare the two sides, as the normal tip is often sensitive to pressure. Tenderness on pressure over the emissary vein which comes out through the mastoid foramen is also important, even although its presence does not indicate thrombosis of the

sinus. Finally, it is to be remembered that exceptional cases of mastoid disease exist in the absence of pain on pressure, and that not merely furuncle but occasional otalgias of hysterical or other origin may attempt to confuse us. Of equal import, therefore, from a diagnostic standpoint is the information we obtain by an examination of the external canal and drumhead.

2. The drumhead is markedly bulged forward or outward, frequently even after perforation has taken place. The perforation is oftenest situated on the apex of this projection in the posterior superior quadrant of the drumhead.

3. Of even greater importance and, when it is present, a positive indication for performing the operation is bulging or sagging of the skin of the posterior superior wall of the meatus near the drumhead. In this case again external otitis (furuncle) is to be excluded.

Symptoms 2 and 3 require upon the part of the examiner ability to use the head mirror and ear speculum. Seeing in this case is not merely believing, but knowing, and the writer has always believed that the greatest service one can render his students in otology is to teach them the use of the mirror, so that their inspection of the drumhead might be adequate. It is worthy of mention that this symptom may be absent or not marked in cases in which, while there is free drainage from the middle ear and antrum, an abscess exists at the mastoid tip.

4. Discharge.—Very frequently the discharge of pus is profuse, and if this has lasted for a week or more the necessity for operation is probable. In many cases the discharge suddenly diminishes greatly or stops altogether, while the process in the mastoid progresses. A bacteriologic examination of the pus is advisable, since when the infection is due to streptococcus or pneumococcus operation should be performed earlier, and the infection is likely to be more severe. This is particularly true of cases occurring in children. The old-time symptom of edematous swelling, or swelling and reddening of the skin of the mastoid, very often indicates neglect. When this is marked the auricle stands away from the head, and if this occurs after the disease has existed for some weeks extensive absorption of bone in the process and frequently perforation of the cortex has taken place. If the swelling occurs early the abscess is superficial, or the edema and other inflammatory symptoms are due to the periostitis associated with furuncle of the canal.

5. Another local symptom is a marked increase in temperature of the affected as compared with the sound mastoid.

6. Dullness on percussion of the mastoid performed with index finger or small hammer is to be regarded as of diagnostic value if it occurs in connection with other symptoms, especially if the dullness develops while the patient is under observation, but its value as a diagnostic aid is very limited, because there is sometimes no difference in the percussion sound of the healthy and the diseased mastoid, and the sound may differ in the two normal mastoids of the same individual. Further, it can not be used when there is swelling over the process.[1]

7. Andrews' test to determine the density of the mastoid, and hence the presence or absence of disease, is open to the same objections, since it depends upon the same physical laws. Andrews' test[2] is made by placing a stethoscope with a small bell over the tip and placing the handle of a C_2 tuning fork over the antrum. It is found that when the mastoid cells are filled with pus or granulations, or when the density is increased from bone proliferation, the sound waves are transmitted to the ears of the examiner with greater intensity and for a longer time than occurs when the mastoid is normal. No traction should be made upon the soft tissues, since this will increase the sound.

8. I have said nothing as yet of the systemic manifestations of the disease, because they are not, as a rule, characteristic. Usually temperature, pulse and respiration are not materially affected, excepting in children, in whom the temperature may rise to 104 F., even in uncomplicated cases. While there is usually a slight elevation of temperature in adults, and frequently one going to 101 or 102 F., fever may be entirely lacking.[3]

1. Politzer: Diseases of the Ear, p. 504.
2. Laryngoscope, x, 416.
3. Grunert: A. F. O., xxxv.

Decided prostration, indisposition to exertion, when present, are suggestive. Chills, vertigo, nausea, vomiting, sweating, are unusual excepting in the presence of intracranial complications. These occur more frequently in chronic cases, but must always be looked for, since operation must be performed promptly in the event of their onset. Every case of acute mastoiditis complicating acute suppurative otitis media should, of course, have the benefit of preliminary antiphlogistic, or so-called abortive, treatment before operation upon the mastoid is undertaken. This will include the free incision of the drumhead in the upper posterior quadrant and including the sagging inner portion of the posterior wall. Cold, either by means of the Leiter coil of aluminum or thin rubber ice bag, should be applied for not longer than forty-eight hours. Too prolonged use of the ice is to be avoided, since by its use the symptoms are masked. For the same reason analgesics should be administered only with caution and stinginess. It has been claimed by Politzer and others of his school that the surgeon should not operate, in the absence of symptoms pointing to intracranial involvement, before eight or ten days after the onset of mastoid symptoms, since it takes that time for the frequently disseminated foci of infection to coalesce or to become evident to the eye of the operator. This caution is to be observed particularly by surgeons who do not practice a complete exenteration of the process and cells extending into the zygoma. With this contention the writer is not in accord. The fact that many cases recover without operation does not balance the lives lost through delayed operation. The three considerations that all cases of acute suppurative otitis media exhibit, pathologically, antral and mastoid involvement, that cases of intracranial trouble are not infrequent, and that all of the chronic cases which give us so much trouble were originally acute, should determine the earlier and more frequent performance of this very safe and rather easily performed operation.

DISCUSSION.

Dr. Joseph C. Beck:—While the hour is late, I cannot refrain from saying a word or two on these papers. With regard to perforation in cases of acute otitis media, with mastoid complications, there is one kind of perforation that I wish to speak of particularly, and that is the projection of the swollen mucous membrane through a small perforation situated high up. In many cases of this type there were grave complications or marked destruction of the mastoid without external manifestations. I believe those are the observations of most men who see these cases. In regard to the diagnostic point of auscultation of the mastoid antrum, by the Andrews method, I have been sadly disappointed with it, and have found the opposite to be true. I cannot go by that symptom. One case in particular Dr. Andrews saw with me, which at the operating table showed the opposite condition. Other men have told me that this test has been very useful to them.

Dr. Holinger, in closing the discussion on his part, said: The great variety in the anatomy of the temporal bone is partly dependent upon the general form of the skull. Long skulls have usually pneumatic mastoid processes, while in round skulls, all parts are more, so to say, crowded together. Among white as well as colored men, there are races or tribes who have mostly round, others mostly long skulls. I find the Polish a race of people with pronounced brachycephalic heads, and my experience with them has been such that I would like to caution any of you who may have to operate on mastoid processes of these people.

Some time ago I spoke to Professor Kummell, in Breslau, about this question, and he was very pronounced in his ideas, because he has had a great deal of experience. Professor Hartmann of Berlin ridiculed him. I agreed with Professor Hartmann that I did not believe there was such a pronounced difference. Since then I have had repeated experiences. I have found the lateral and sigmoid sinuses less than a millimeter to the rear of the external meatus, and the dura of the temporal lobe less than a millimeter in front of the middle ear and top of the external meatus. I think this suggestion may be of value to some of you.

Dr. Hardie, in closing the discussion, said:—I expected to be attacked be-

cause of my radical views. It has been customary in the past to wait until something happened in these cases of mastoiditis. While I believe it is possible sometimes to operate too early, I think it is better to operate too early than to wait a little too long.

A regular meeting was held March 14, 1906, with Dr. Charles Spencer Williamson in the chair. Dr. F. Kreissl reported the following cases:

ABDOMINAL AND VAGINAL URETERAL FISTULA CLOSED BY CATHETER LEFT IN INJURED URETER FOR THIRTEEN DAYS—PRIMARY TUBERCULOSIS OF THE BLADDER AND LOWER END OF THE URETER CURED BY LOCAL TREATMENT.

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(*Abstract.*)

After a difficult hysterectomy, which was performed by Dr. Stillman, of Chicago, Sept. 29, 1904, complicated by a psoas abscess and by unusual extensive adhesions, the evening temperature rose to 102, pulse 120, and remained so for four days. Emesis was present all this time. October 1 patient complained of pain in the right side. October 4 the evening temperature declined to 99.2, pulse to 86. While dressing the wound, October 5, a strong ammoniacal odor was noticed, and upon inspection a urinary fistula in the laparotomy wound and in the vaginal vault was discovered, through which urine leaked freely for the following eight days. October 13 Dr. Kreissl was asked to make a cystoscopic examination to determine the origin of the leak. He found a normal bladder, a perfectly working left ureteral os, but the right ureteral orifice was wide open, motionless. Passing a catheter, No. 7 French scale, into this ureter, it seemed to be checked in its further progress four inches from the orifice, but upon pushing it on, with a very slight effort, the tip seemed to glide over an impediment with a jerk and moved easily upward until the marking outside indicated that it had arrived in the renal pelvis. On its way to the obstruction nothing came through the catheter, but as soon as this was passed and all the way up to the pelvis urine containing much pus ran out of it as if under pressure. Two hours after the catheter was placed in the ureter the dressings covering the fistula were found dry and remained so thereafter. The leakage through the vaginal vault had also ceased. The catheter was left *in situ*, and through it the renal pelvis irrigated with antiseptic solutions three times daily. The bladder was also antiseptically treated through a catheter introduced alongside the other instrument. The urine which came through the ureteral catheter was measured daily and examined in the laboratory. It averaged twenty-four ounces; the quantity of pus and albumin, being very high the first day, decreased gradually, while the percentage of urea rose from 0.1 per cent. to 1.5 per cent., and the specific gravity 1006 to 1016 at the end of ten days. The fistula was completely closed October 20. The temperature and pulse during all this time were normal. No pain was complained of along the urinary route. On October 24 the woman dressed and left the hospital for a few hours to attend a dinner party. On October 27 he removed the catheter and found both ureteral openings alternately emitting jets of urine by normal rhythmic contractions. A short time ago Dr. Stillman brought the patient to him for reëxamination. It is now sixteen months since she left the hospital. She is in perfect health. The urinary functions and the urine are normal in every respect.

This case demonstrates the value of the ureteral catheter for therapeutic purposes on suitable occasions, as in this one, where it has returned to perfect function a damaged ureter and saved a kidney which otherwise undoubtedly would have to be removed to cure the urinary fistula. It further shows the fallacy of the statement of Winter, and which is regarded as an axiom by others, that in transverse lesions of the ureter the os will be seen absolutely motionless, while in lateral injuries the orifice, without emitting any urine, will open and close, al-

though not so completely and regularly as under normal conditions. The author has never found the procedure associated with any inconvenience to the patient or followed by any lesion of the parts it comes in contact with, as long as the necessary precautions are observed. These are absolute cleanliness and delicacy in introducing and placing the catheter so as to avoid traumatic lesions, and frequent washing of the renal pelvis, which has to be more frequent the more concentrated the urine is, or else urinary salts will be deposited in and on the catheter, which will act as a chemical irritant outside and plug the lumen without causing urine leakage alongside of the catheter. In this way prompt closure of the defect will be prevented.

The second case was one of primary tuberculosis of the bladder and lower end of the ureter cured by local treatment. The patient, a robust girl, 18 years of age, was seen by the author in consultation with Dr. Abt, of Chicago, June 25, 1904. The patient gave the following history: October, 1903, owing to a severe cold contracted during menstruation, frequent and painful urination set in. Rest in bed and internal medication kept up for several weeks failed to relieve her. Bladder irrigations were added, which made the condition decidedly worse; terminal tenesmus occurred; the urine became more turbid than before and had to be voided every fifteen to thirty minutes. The patient was not noticeably reduced in weight during this time—about eight months—in spite of loss of a good deal of sleep and much suffering from pain. In the cystoscopic examination a number of typical small-sized tubercles were seen in the trigone and a few in the corpus above the interureteric ligament. The right uteral orifice appeared normal; the left one was surrounded by an elevated, cone-shaped, infiltrated and congested area. Close to the orifice a tuberculous ulcer was established. The rest of the bladder cavity seemed healthy. Passing the first three inches of a catheter into the left ureter, he obtained an almost creamy fluid, containing many fragments of inspissated pus. Gradually passing the catheter higher up, the urine became clearer and free from fragments until about six inches from the orifice it was transparent. In view of the previously mentioned conditions in the bladder and in the vesical portion of the ureter he did not venture to pass the catheter higher up. The microscopic examination of the bladder urine and the one obtained separately from the left ureter showed very few blood cells, pus cells, a few streptococci and no tubercle bacilli. This result was corroborated by the Columbus Medical Laboratories, which received a part of the same specimen for examination.

In a second examination of the urine, made June 29, a few tubercle bacilli were found in that portion which was taken from the lowest three inches of the ureter, but none in that from the middle part. On this occasion several well-developed ulcerations were observed in the trigone. The largest ones were far away from the left ureteral orifice. July 5 a guinea-pig was inoculated, which died July 30. The report from the Columbus Laboratories read: "Animal emaciated. At the point of inoculation an area of tuberculosis; bacilli present; glands, liver and spleen tuberculous." In view of the peculiar condition of the urine in the different portions of the ureter, and the fact that no bacilli were found in the middle section, the possibility of a primary and ascending infection of the bladder strongly suggested itself, and local treatment commenced July 5. It consisted of instillations of 5 per cent. iodoform-guaiacol suspensions, alternating with bichlorid solutions, in the bladder and in the lower segment of the ureter. Under this treatment the subjective symptoms improved rapidly, and the ulcers healed within a month, while it took the tubercles about two months longer to disappear. Simultaneously with the latter the tubercle bacilli disappeared from the urine, which became quite clear and has remained so since. An inoculation test made in Colorado, where the patient spent a few weeks in the summer of 1905, gave a negative result. The speaker saw her again a few weeks ago and found her enjoying perfect health.

DISCUSSION.

Dr. Frederick A. Leusman:—Primary ascending or urogenous tubercular infection of the bladder is an extraordinarily rare event, if it ever occurs, according to the painstaking and scientifically conducted observations of the leading men in

this line of surgical industry, as Rovsing, Israel, Tuffier, Kümmel, Caspar, Morris and others too numerous to mention. So if Dr. Kreissl is correct in assuming the case reported to-night to be one of primary tubercular cystitis his experience will go down the annals as extraordinary and singular.

Dr. William Cuthbertson:—Dr. Kreissl mentioned leaving the ureteral catheter *in situ* for a number of days. About four years ago a patient was admitted into my service at St. Luke's Hospital with uretero-vaginal fistula. I found the severed end of the ureter and sutured it in place. This suture broke away and the urine escaped from the wound and made its appearance on the surface of the abdomen, leaving the last condition worse than the first. I then asked Dr. Kreissl to assist me in doing a second operation and to introduce the ureteral catheter from the bladder up into the ureter. This was done, and I then united the severed end of the ureter around the catheter to the bladder wall. This operation was successful and the catheter remained *in situ* for twelve days. It caused the patient no inconvenience, and the only untoward action was the formation of some urinary salts around the ureteral catheter. The patient made a complete recovery and is still well.

Dr. Kreissl (closing the discussion):—The remarks of Dr. Leusman referring to the opinions of so many authorities that there is no such thing as a primary tuberculosis of the bladder, I want to modify somewhat. It is true that very few cases of true primary infection of the bladder with tuberculosis have been observed. They may have been observed and not recognized; they may have been recognized and not published. There are cases in which we are unable to decide whether the tubercular process started in the bladder or was secondary to tuberculosis elsewhere. If this case had gone on I am confident that there would have been a progressive ascending infection, and that, sooner or later, the kidney would have been involved, and then there would have been a dispute as to whether the bladder became secondarily infected or the kidney. My chief reason for reporting the case is that there was a discussion in this society about two months ago on tuberculosis of the genito-urinary tract, and at that time I made the remark that there is such a thing as a primary tuberculosis of the bladder, and that if we got a case that was not too far advanced, even if there were ulcerations, in my experience it is possible to cure it, and the case I have reported demonstrates it. I have other cases that have been benefited and cured by topical applications, but, of course, I hesitated to publish them; for the same reason I waited a year before reporting this case. I can not see why there should not be primary infection of the bladder with tuberculosis. I do not insist that the infection came through the circulation, or that it came through the urine. In this case, however, like in others, it is possible that the infection was carried to the bladder by careless catheterization. Maybe the patient originally had nothing but a cystitis; perhaps an infected catheter was used and tuberculosis was inoculated in an ordinary case of cystitis. I recall a case in which, by careless cystoscopy and ureter catheterization, tuberculosis of the bladder and ureter was engrafted on an ordinary gonorrheal cystitis. There is true primary tuberculosis of the bladder, leaving alone the question of the source of the infection.

Dr. George E. Brewer, of New York City, read a paper, by invitation, entitled "Some Observations upon Acute Hematogenous Infections of the Kidney."

The discussion was opened by Dr. Arthur R. Elliott, who said:—I have had little personal experience with acute virulent unilateral blood infections of the kidney requiring nephrectomy. The less acute conditions fall more within the daily experience of the physician, and from the standpoint of general clinical interest are perhaps hardly less important. I desire to discuss this aspect of the subject as far as my limited experience enables me to do so. Hematogenous infection of the kidneys in the classic form occurs most frequently as a complication of acute infectious diseases, such as pneumonia, pyemia, ulcerative endocarditis, etc. The "idiopathic" variety of renal infection, which is apparently primary and spontaneous, inasmuch as it bears no appreciable connection with any antecedent condition, is more of a clinical rarity. The source from which the infection origi-

nates and also the microörganism causing it may escape detection. Pus may be absent from the urine or only appear in appreciable amount several days after the acute symptoms arise. A microscopic pyuria may exist throughout and casts be present in the urine sediment. The following case is taken from my notebooks as an apparently typical example of the milder type of cytogenetic infection of the kidney:

The patient was a nervous, active little girl, 8 years old. Her personal history was absolutely without importance except that she was somewhat disposed to atfacks of biliousness, during which she would have backache and the urine would become concentrated and irritating to the bladder. There being symptoms of this character present, the urine was examined and found to contain excess of indican, a trace of albumin, but no pus or casts. The little patient was put to bed and the diet carefully regulated, laxatives being administered. A few days after she suddenly had a severe chill, with a quick rise of temperature to 104 F. The tongue was coated and the bowels costive. The urine was found to contain pus. There was no pain until the end of the second day, when shooting pains were experienced in the right side, with the development of considerable tenderness in the right flank. The pyrexia continued for five days. The temperature curve was very erratic. On the fourth day the urine contained 2 per cent. bulk of moist precipitate, estimated by centrifuge, consisting almost solely of pus elements, with a few blood corpuscles. At this time there was much tenderness on palpation in the right lumbar region and exquisite sensitiveness to light pressure over the lumbar muscles posteriorly and at the costol vertebral angle. There was no dullness or bulging in the right flank. The lower pole of the opposite kidney was palpable without tenderness. Liver not enlarged; marked leucocytosis. Decubitus on right side, with leg drawn up. The stools did not contain mucus. Patient was drowsy and looked very ill indeed. Bacteriologic examination of the urine revealed common pus organisms and saprophytes. On the fifth day of the attack the urine suddenly cleared of pus and the temperature gradually declined until it reached normal in forty-eight hours. For a week, pus, leucocytes, hyaline casts and unusual numbers of cylindrical epithelia were present in the urine sediment. Convalescence was uneventful and to-day the child is in normal health, with a clear urine. I regard this case as an instance of hematogenous infection of the right kidney, with abscess formation and discharge of the pus into the renal pelvis.

An aspect of hematogenous infection of the kidneys which has interested me more than any other is the invasion of the kidneys by infection during the course of chronic Bright's disease. Any microörganisms which gain access to the blood must be removed therefrom by the kidneys. This renders these organs particularly liable to infection, as witness the frequent bacteriuria, albuminuria and pyuria of the acute infectious diseases. In chronic Bright's disease a lowered renal resistance and blocked kidneys must surely favor infection. Although I have no exact data with which to reënforce my belief, I have long been of the opinion that suddenly developing anuria in Bright's disease is often the result of renal infection. The bacillus coli commune I believe to be often responsible for this. I could recite a number of suggestive instances from my experience, but none of them is conclusive. I believe, however, that suddenly occurring anuria with its almost invariably fatal ending during the course of chronic Bright's disease is often due to hematogenous bacterial invasion of the kidneys.

An aspect of hematogenous infections of the kidney of which I wish to speak is the after-effects of slight infections on these organs and particularly their influence in the production of obscure renal hematuria. Acute infection of the kidney, whether it is circumscribed or diffuse in its involvement of the organ, essentially constitutes a trauma in its effects on the gland structure. It is well known that a localized process of interstitial nephritis is usually set up by traumata of the organ. This is true of wounds, calculi, infections, ureteral obstructions, abscesses, infarcts, gummata, etc. The interstitial degenerative process may be strictly circumscribed to small areas of renal tissue or involve the major portion of the organ, according as the determining trauma has been slight or severe. This local interstitial inflammation must not be mistaken for Bright's disease

proper. Such a mistake has before now been made and has given rise to much confusion and misinterpretation, especially in the matter of the operation and decapsulation of the kidneys for nephritis. Unilateral nephritis, *per se*, is not productive of the cardiovascular disturbances and toxemias of Bright's disease. It bears about as much direct relation to chronic Bright's disease as unilateral fibrous goiter does to Graves' disease, and that is practically none at all. Unilateral nephritis may, however, give rise to symptoms. Casts and albumin may exist in the urine from that kidney, and nephralgic pains or obscure renal hematuria may mark the future of such a case. It is difficult to explain how hematuria may result from a local and perhaps very circumscribed area of interstitial fibroid change.

Although unable to adequately explain the fact, clinical records show that a small patch of interstitial fibrosis may be the only microscopic change found in a kidney which has bled severely and persistently. The area of involvement may be so small as to escape the most careful search, and it is perhaps partly on this account that even to this day cases of essential renal hematuria with an unexplained pathology are reported. One method of production is advanced by Fenwick to explain two of his operated cases of renal hematuria. He found at operation in each case the apex of one of the papillæ tipped with a villous-looking growth, which proved under the microscope to be a varicose dilatation of the papillary plexus; in other words, a papillary angioma. Removal of this growth with a sharp spoon controlled the hemorrhage in both instances. He ascribes the vascular tumor to compression of the papillary vessels on the proximal side by a patch of localized interstitial nephritis, probably resulting from some preceding obscure infection of the renal substance. It is altogether probable that subacute and strictly localized infections of the kidneys are much more common than we now believe. We might seek analogy in the frequent healed and circumscribed lesions of the lungs revealed at autopsy in unsuspected cases. The depurative office of the kidneys renders them peculiarly liable to bacterial infection. That they do not escape unscathed we may infer from the frequent scars and localized areas of inflammatory change which are oftentimes revealed at autopsy in cases without renal history.

To return for a moment to the question of renal infections as a factor in the production of hematuria, I offer the following case history as of interest:

The patient is a physician, 43 years of age, without significant family history save the fact that his brother has chronic interstitial Bright's disease. Patient had typhoid fever at the age of 28. Eight years ago he experienced a sudden symptomless hematuria of medium grade, lasting, with diminishing intensity, for three weeks. No exact urinary data are available during the attack. Very shortly after a quantitative analysis showed total amount of urine, 1,000 c.c.; sp. gr., 1020; urea content high; a trace of albumin and a few casts in the sediment. One year after there was a second hematuria of less severity and duration, unaccompanied by pain or other symptom. A third attack of bloody urine occurred after another interval of three years. Although there was no renal colic during this attack, the patient complained of a good deal of aching across the loins and felt very ill and feverish. The urine findings, made several weeks after this attack, were: Total daily excretion, 1,000 c.c.; sp. gr., 1020; urea, 26.50 grams; no albumin, no sugar, moderate indicanuria, no casts. The fourth and last attack of macroscopic hematuria occurred in June, 1904, two years after the last previous recorded. As in former attacks, there were no pain or local symptoms. This attack was apparently precipitated by errors of diet. During the period covered by this succession of hematuric attacks repeated physical examinations were made. The constant findings were as follows: Patient neurotic, excitable, reflexes exaggerated; no polyuria; an occasional, but not invariable, nocturnal urination; habitual constipation; retinal examination negative; B. P., 120 mm. (R. R., 9 cm.); maximum recorded; no cardiac hypertrophy. Arteries not sclerosed; pulse 72, regular. Abdominal examination negative, except for frequent evidences of fecal stagnation. There was no tenderness on deep pressure in the renal regions and the kidneys were not palpable. X-ray examination proved negative. Bacteriologic examination of the urine showed no tubercle bacilli. Meanwhile no symp-

toms were complained of by the patient except a good deal of general nervousness, frequent bilious attacks and occasional aching across the loins.

The etiology of this recurrent hematuria constitutes a difficult problem. It was a source of great interest to me during the years of my observation of this case. There is nothing in the patient's heredity or personal history to indicate that he is a "bleeder." The absence of pain, colic, urinary signs and the negative results of *x*-ray photography render the existence of stone extremely improbable. Urinary tuberculosis is excluded by the progress of the case and the patient's present excellent health. Malignant disease seems out of the question. There is a clean urethral history and the bladder has never been the seat of local signs. Such a hematuria as marks this case may occur in chronic Bright's disease. To negative this interpretation there is the entire absence of cardiovascular developments and the other classic indications of Bright's disease.

My study of this case has developed the following suggestive facts: The patient is found to have an exceptional intolerance for proteid foods and especially for all forms of meats. Eating meats quickly and invariably gives rise to severe toxemia, manifested by elevation of pulse tension, coated tongue, dizziness, loin-ache, diminution of urine, rise in body temperature, extreme nervousness and depression of spirits, and the appearance in the urine of indican in pathologic amounts, albumin, casts and blood elements. The last recorded attack of macroscopic hematuria was apparently connected with over-indulgence in red meats during a period of unusual professional activity. Unfortunately, the urine was not obtainable during this attack for bacteriologic examination. A number of periods of microscopic hematuria induced by proteid toxemia have been observed during the past eighteen months. Examination of the urine at such times has failed to reveal the bacillus coli commune or other pathogenic bacteria. A dose of calomel and a return to meat-free diet suffice to cause a return of the urine to normal. The urine sediment remains free from blood elements so long as a meat-free diet is adhered to.

In this case we have established a direct connection between hematuria and a toxemia induced by the ingestion of meat, in all likelihood a bacillus coli commune activity. I think I am justified in inferring that the attacks of gross hematuria noted were the result of intense renal hyperemia with hemorrhagic extravasation produced by the action of severely irritating toxins from the bowel. It may even be possible that the kidneys were, during the periods of hematuria, the seat of an actual bacterial infection, but this I am unable to prove. Such an event, as I have before remarked, may be more common than we at present realize. The ability of an acute invasion of the kidneys by the bacillus coli commune or other bacteria to cause hematuria we may, perhaps, be justified in believing. We observe analogous consequences resulting from bacterial infection elsewhere in the economy; for instance, in the lungs. It has recently been demonstrated that atypical infection of the lungs of tuberculous subjects by the pneumococcus is a frequent cause of hemoptysis. Many hitherto mysterious epidemics of hemoptysis observed in the wards of hospitals and sanatoria for consumptives are thus explained. A hematogenous bacterial infection occurring in the kidneys may similarly supply an etiology for some, at least, of the obscure so-called essential hematurias observed from time to time.

Dr. Henry B. Favill:—The very careful and significant discussion by Dr. Brewer must be considered in general as rather disquieting. If in the course of indefinite infective attacks the practitioner is liable to find himself dealing with a phase, even though an accidental phase, of infection which, by reason of its local characteristics and virulence of infection, is liable to be rapidly fatal, and if in connection with that its determining diagnostic characteristics are liable to be very obscure, the opportunity for imperfect diagnosis and consequent failure to apply the radical treatment necessary to save life is perfectly obvious and in the highest degree serious. That such are the facts one can not doubt after seriously weighing Dr. Brewer's statements.

Like all of the very serious problems in medicine, the question demands a careful discussion of the foundations of diagnosis in the individual facts to discover, if

possible, where the line is to be drawn between the cases which are so grave as to demand extirpation of the kidney and the cases, undoubtedly vastly preponderating in number, which tend to spontaneously recover without that capital procedure. From a strictly pathologic standpoint it is probable that a broad classification would be impossible. Although it is difficult to demonstrate from an etiologic point of view, there is doubtless a great difference between lesions which are inflicted upon the kidney by reason of materials brought in the blood current of a chemically toxic nature and lesions produced in the kidney by organized septic particles brought in the blood current of an essentially embolic nature.

So far as I can now see, the danger of this acute destructive sepsis of the kidney outlined by Dr. Brewer lies in the territory of the embolic septic accidents or the so-called septic infarcts. That, however, is a pathologic view, and with difficulty transformed into a clinical view. To illustrate the difference let me cite briefly the following considerations:

It is a very common experience to meet with cases of acute sickness in individuals previously sound, at ages ranging from infancy to old age, in which the attack appears to be an acute gastrointestinal toxic performance of some kind. Such an individual is taken with vomiting, perhaps diarrhea, intense abdominal pain and with temperature ranging from normal to 104. Examination of the urine during the attack and afterward will show that the previously normal urine has been transformed into concentrated, extremely acid urine, oftentimes containing much diacetic acid, extreme indican, albumin in variable quantities, sometimes very large blood cells in abundance and myriads of granular casts, sometimes considerable pus, sometimes not. The condition in its acute stage is a very severe one, though as a rule transient. Such urinary showings are liable to disappear inside of a week, and as a rule inside of two weeks. I could cite many histories if it were opportune.

The indications pointing to kidney involvement are usually lacking, although occasionally there will be pain in the region of the kidneys. The pain is liable to be severe in the abdomen, and this even in cases which have shown no marked intestinal symptoms. More than once the question of appendicitis has arisen in striving for a diagnosis.

These cases are doubtless due to intense toxic manufacture in the gastrointestinal tract, and the kidney participation, so far as one can conjecture an acute toxic attack, hematogenous, and probably so far as the kidney is concerned nonseptic. These renal manifestations are undoubtedly akin to the milder renal manifestations which we find in all sorts of less acute toxic sickness and simply in their aggravated showings bear witness to the intensity of this acute happening.

Where they shade into experiences of the following kind is an interesting and important question, and it is at this point that difficulties of diagnosis are most liable to arise, because the foregoing cases, although very disquieting at the moment, would not be likely to raise the question of surgical interference. Some years ago a patient, a woman 35 years of age, with whose previous physical condition I was thoroughly familiar, was attacked with acute tonsillitis of staphylococcus origin; not seriously ill. After three or four days there suddenly developed what seemed to be a sharp reinfection, and somewhat later intense pain in the left side, and still later tenderness in the costo-vertebral angle, but more distinctly tender in the anterior abdominal aspect upon bimanual palpation. Soon the kidney became distinctly palpable and very appreciably enlarged, the temperature ranging from 102 to 103.5. The urine, previously normal, showed albumin, casts, blood and a very considerable amount of pus. The condition for a short time seemed very acute and the patient, of course, a source of considerable anxiety. In the course of three days the acuteness subsided and recovery followed promptly, and inside of two weeks the renal signs were practically abolished and gradually the urine became entirely normal and has remained so to this day. There seems to be hardly any doubt that this case was one similar to the cases recited by Dr. Brewer. What the factor may have been which kept it within the territory of spontaneous recovery one can only conjecture.

The important question is, What is going to be our point of view during the course of the attack before the severity of the septic process can have been fully determined in the light of our accumulating knowledge as to the tendency in a certain proportion of cases to fatal issue? It seems to me that there is liable to be a very grave and difficult question in judging of these matters. If the assumption is sound that this case I cite was a true kidney infection, it must be concluded that it could easily enough have passed into the category of cases demanding operation. On the other hand, the fact that it did not and underwent entire recovery must, beyond any question and just as seriously, demand a conservative view which would act as a stay to operative procedure. To answer this question by simply saying it is a matter for judgment in the individual case is to utter a simple truism, but not at all to facilitate the diagnostic or prognostic factors in the matter. The same statement is made and was formerly made with far greater emphasis with reference to the subject of appendicitis. To-day we have virtually cut the Gordian knot and have gone almost to the extreme in the direction of operating, diminishing the category of cases which are proper subjects of deliberative judgment to the very minimum. Such a solution of this kidney problem can never happen. The removal of a kidney in any stage of disease stands in its relations to the individual life as one of the most capital of operations, and the time can never come when we can say, "When in doubt, operate," as we now say with regard to the appendix. Doubtless the type of infecting agent is a strongly determining factor, but we have only crude and symptomatic indices upon that factor as yet. The unusual case is the enlightening case, as a rule, and I would cite the following curious experience: A man 26 had been under my care for two years, with what I supposed to be chronic parenchymatous nephritis. His urine showed large amounts of albumin, moderate quantities of casts, not a profuse quantity and abundant solids. Being taken with an acute illness of some infective nature, in the hands of a colleague, I was called to see him in consultation. He had developed in the right side a severe pain, with all the signs of acute sickness; great tenderness on antero-posterior palpation, with a distinct tumor of the right kidney, which seemed to promise abscess. The urine only contained a moderate amount of pus. Believing, as I did at that time, that we were dealing with a case of "large white kidneys," it seemed to me that there had been a septic development in one which was liable to destroy it. However, for various reasons no surgical interference was seriously considered, and the man gradually recovered from the acute condition and gradually resumed his habitual condition of chronic nephritis. Within two years, during the wave of adventure in the Edebohl's capsule splitting procedure, he was subjected to operation on both kidneys. He was found to have both kidneys extraordinarily hard and contracted, though yielding constantly, up to this point, all of the urine manifestations of the other type. His case is interesting for two reasons: In the first place, it shows clearly enough that a severe septic accident may occur even to a badly damaged kidney and spontaneously recover. It shows, moreover, what, to be sure, has been shown innumerable times, that our judgment as to the anatomic condition of kidneys, based on urinary findings, is extremely unreliable.

Although I have other experiences bearing upon this subject, I do not care to take the time to detail them. These serve as a text merely for the following reflections: First, if this kidney condition in question is pathologically the result of septic infarct, it is only reasonable to suppose that it may be unilateral. Where the condition seriously demands a decision as to operative procedure, segregation of the urine of the two kidneys by some method is imperative. The great obstacle to operation upon one kidney is the condition and possibilities of the other. Segregation can determine this question with reasonable certainty. A palpable tumor would, of course, strongly suggest a unilateral lesion, with a fair assumption as to the health of the other, but my second case cited shows that that need not be the case and that it is entirely possible for this condition to occur in the course of pronounced bilateral nephritis. Second, with the groundwork of diagnosis established, the unilateral character determined, the septic process pro-

nounced, there is still a large margin of doubt as to when the point has been reached where removal of the kidney is necessary. Upon this question I have nothing to suggest in addition to what is suggested by Dr. Brewer. It is so obviously a case for combined medical and surgical judgment that I shall simply say that surgical consultation should be invoked as soon as there is any reasonable suspicion of this condition, and so far as our present light goes the question must be weighed upon its current aspect. Third, and this is the most important word that I have to say, in the vast majority of instances this condition will occur under the observation originally of the general practitioner. The fate of these grave cases will rest upon the alertness of the man in charge. Considering the fact that these gravest of conditions may exist with scarcely any diagnostic signs, it is inevitable that sometimes they shall be overlooked. It is very rare, however, that there would not be some condition sufficient to raise a suspicion of what is in progress. It is of the deepest importance that a man in general practice, and hence in relation to these things in their early stages, should come to a realization of the condition and its gravity and bring to bear upon them with all possible completeness the best surgical coöperation.

Dr. L. L. McArthur:—The society is to be congratulated on hearing this epoch-making and pioneer paper. Current literature is practically a blank so far as any systematic recognition of the treatment of this particular type of cases is concerned. It is true that throughout the literature one will find here and there cases singly reported of the type that Dr. Brewer has presented. In the deadhouse there have been shown us regularly and systematically by pathologists the kidney lesions which they have demonstrated and removed *in vivo*, which, alas! are too frequently found in the deadhouse and not in the operating room. The cases presented by Dr. Brewer should not be confounded with the type of suppurative kidney which so frequently results from extension upward from infective processes below in the same urinary tract, but are to be considered as infections coming through the vessels to the kidney. It has been a difficult matter to conceive how the lesion could be so absolutely unilateral in a given case, as has been the experience of Dr. Brewer. That it does occur is true. It remains yet to be explained how it occurs. It is hard to conceive of so many particles of infective material floating into a single renal artery, lodging in so many of its branches and confining itself there. Perhaps some trauma unknown to the patient may have been the cause. It seems unreasonable that it should have been months or years before the condition occurs. Personally I have had experience with two cases of this type, and my experience, because of the gravity of the condition, has driven me to operative interference. The symptoms were as described by Dr. Brewer: pain, enormously high temperature, 105-6, coming on suddenly. One case occurred in a young woman of 25 or 28, who had been married in the East; she had taken a journey of three days on the train. On arriving in Chicago she had a chill, abdominal pain, pain over the lumbar region at the costo-vertebral junction, with a bacteriuria of the most pronounced type, so that when the urine was held up in the sunshine it presented a fluoroscopic character on account of the innumerable bacteria present. There were very few pus corpuscles. The bacteria, on staining and culture, proved to be colon bacilli. After watching her for two days with this extremely high temperature, the mental condition growing worse, I was induced, after consultation with my confrères, to incise this kidney. The kidney capsule was found edematous; the kidney swollen, with mottled reddened area in various portions beneath the capsule, and, upon incision of the posterior aspect of the kidney, there was a free escape of fluid, but no pus. The cavity of the pelvis had been opened; turbid urine escaped, but no pus. The kidney was drained. The temperature promptly declined to normal, or nearly so, and the patient made an uninterrupted recovery. This appeared to be a case of acute hematogenous infection of the kidney with the colon bacillus from a lack of care of a young bride traveling on a train for two or three days without emptying the colon. During that time she had no bowel movement.

The second case was that of a young child, five years of age, which had been through an exanthem, whether scarlet fever or not, I am not sure, nor was the

attending man. But, on the tenth or twelfth day of the sickness there were symptoms of pain in the side, and tenderness over the left kidney. Pus appeared in the urine, and bacteria. The temperature was rising and the patient becoming stupid, the kidney was incised and drained, and found to contain pus in the cortex in one or two areas. In neither of these cases did it seem necessary to excise the kidney.

Anatomically, the vessels of the kidney are terminal. When an embolus occurs in one of these it forms a cone of pyramidal shape upon the capsule. It has seemed to me, on theoretical grounds, that the removal of the capsule of the kidney would effect a cure. On theoretical grounds, it has seemed to me that if there were any time when decapsulation of the kidney was indicated, it would be when such a kidney is present as that of which a photograph has been passed around by the essayist. There, we see beneath the capsule multiple pustules, as it were, every one of which could have been opened up by simple decortication, then, with packing of gauze similar to the fixation method of Senn for a kidney, we might possibly preserve the kidney, yet at the same time having drained the abscesses and possibly having effected a cure. I would ask Dr. Brewer how it appeals to him, also why the lesions are multiple in a single kidney? I remember reading some ten years ago a paper by Lilienthal of New York in which cases were reported of abscesses of the kidney having been opened and drained without the removal of the kidney, in which he did at that time a nephrotomy, opening the abscesses, with conservation of the kidney, and cure of patient.

In this connection a condition not unlikely to be mistaken for a surgical kidney of this type is a form of kidney lesion which those who have had considerable to do with the septic processes associated with the appendix will meet with, and in which it will be necessary to make a differential diagnosis. I refer to hemorrhagic nephritis of a septic process in the appendix. I recall at least half a dozen such cases within my own personal experience. We have had occur symptoms where it was difficult to differentiate between appendiceal colic and a renal colic, considering the character of the pain and the character of the blood count. The high temperature would lead one to think of a septic process, and to think that the appendix was the source of the trouble. In the absence of tumor, however, and in the presence of blood, pus, and micro-organisms in the urine, it might easily be that we have to deal with a kidney lesion and be led to operate, when, in reality, it was due to a gangrenous appendix. It has several times occurred that the mere removal of a gangrenous appendix has made such a type of hemorrhagic nephritis subside. On looking over the literature in regard to this type, I find that Dieulafoy, Hildebrandt and Lorain each had experience of the same kind. In two cases of four that Dieulafoy operated on, death ensued. On examining the kidney he found both coagulation necrosis and a cloudy degeneration of the epithelium, as associated with the septic process in the appendix. If we have blood and pus in the urine, high temperature, absence of tumor in the neighborhood of the appendix, it might very easily be mistaken for this type of kidney trouble, the kidney might be removed and the appendix overlooked. Such a consideration will have to be taken into account in the differential diagnosis. Hildebrandt noted, in three cases, that the mere removal of the appendix caused the hemorrhagic nephritis to disappear. He did not agree with Dieulafoy that it was necessary to make any operation upon the kidney; nor has it been, in my experience, in those cases in which the appendix was at fault. All praise, I think, is due to Dr. Brewer for urging early surgical interference. The idea of palpating an abscess of this type and of finding such a quotation from the literature of the present day seems to me so absurd as to really excite ridicule.

Dr. M. L. Harris:—I am very glad to have heard the paper of Dr. Brewer, and congratulate not only myself, but all of the members present, who have had the opportunity of enjoying this treat. I think it is one of the most valuable papers we have had the pleasure of hearing in many a day. The experimental work Dr. Brewer has done tends to show the influence of trauma in determining the localization of the microbes. This is a very interesting point, and the question which it immediately brought to my mind was this: In the first place, out

of thirteen cases, eleven of them were in women, and, in eleven of them, it was the right kidney involved. Knowing, as we do, the remarkable frequency with which we find moveable kidneys in women—more than 50 per cent. of women have distinctly movable kidneys—and the further fact that the movable kidney is almost always the right one, and that these movable kidneys are subject to almost constant congestion, as a result of their displacement, the question which presents itself to me is: What influence has this mobility of the kidney in determining the localization of infection in the right kidney? Is the movable kidney trauma sufficient to determine localization of the infection? Certainly, these eleven out of thirteen cases in women, and eleven of them on the right side, and the extreme frequency of movable kidneys on the right side, would lend some support to this view, and I would like to know what Dr. Brewer thinks of that point.

The necessity of operating on this class of cases I think no one would deny. The point raised by Dr. Favill, however, was a very important one, that is, when is the case serious enough to demand operation, and when will the case recover without operation? We have all of us seen many cases of infections of the kidney recover without operation. That is the one point which is going to call for our best diagnostic efforts. When, however, we have determined the fact that it is a local infection, that it is limited to one kidney, and of the severity and type described by Dr. Brewer, there can be no question as to the absolute necessity of immediate operation.

Dr. Brewer (closing the discussion):—I agree with practically everything that has been said. In the first place, there are a great many varieties of infection by the presence of bacteria in the blood. There can be no question but that certain pathogenic organisms in the blood can be excreted by the kidneys without any anatomical or pathological lesion. In other cases, where the virulence of the organism is more intense, or the kidney resistance diminished, we may have a glomerular nephritis, and the changes which go on owe their presence to an acute toxic condition. We also have mild cases of septic infarcts, in which the organisms are not virulent, and the patient may entirely recover under ordinary conditions. Again, we have cases that are slightly more virulent, where an abscess will break into the pelvis of the kidney, giving rise to the so-called idiopathic pyelitis. We also have metastic abscesses which break into the kidney pelvis. Israel has shown that there are metastatic abscesses in the walls of the pelvis of the kidney, and, on pathological examination, there would be some doubt as to whether we have to deal with a hematogenous or ascending infection, because of the presence of lesions in the pelvis of the kidney. Again, we may have triangular infarcts break through the capsule and give rise to a perirenal suppuration; and finally we may have, in addition, ureteral obstruction from some cause, giving rise to a pyonephrosis. The difficulties of diagnosis are grave. That would be inferred from the number of cases in which we have made mistakes. In the cases I have reported you may think it strange, after three fatal cases from simply opening the kidney and draining it, that I should have operated on a fourth case in the same manner. The first cases were all fatal. Although several years elapsed between the first and fourth case, I had no appreciation of the actual condition. I had supposed that these infections were bilateral; therefore I hesitated to sacrifice one kidney when I thought the other was markedly involved, and it was only after two autopsies in which the lesions found were unilateral at first, and afterwards bilateral, secondary from the primary lesion, that I appreciated that they were often unilateral. Another autopsy showed the same thing, which I did not refer to in my paper.

Dr. McArthur referred to Lilienthal's paper. I remember very well when he reported this case. It was a bilateral case. He did not sacrifice one kidney because he believed the condition was bilateral. After the acute symptoms developed in the kidney he laid it open and drained it, obtaining a good result. I was influenced by his case. After four cases treated by nephrotomy proved fatal, we began to do nephrectomies. Every one of these cases has been successful except one, which was due to the absence of a kidney on the other side, and

this patient, a child, was so ill that it did not seem wise to waste time in either catheterizing the ureters or in using the cystoscope.

The differential diagnosis is often difficult. Within the last three weeks, while I was writing this paper and going over the literature of the subject, I failed in the diagnosis of one of my cases. The patient was a young girl, who was brought to the hospital with a temperature of 105°, with acute pain in the abdomen and over the gall-bladder. I was misled. I made a diagnosis of gall-bladder infection, of subphrenic abscess, or infection of the liver. I ought not to have made that mistake. In cholecystitis, in abscess of the liver, or in subphrenic abscess, we do not have a sudden rise of temperature to 104°. It is always gradual. In this instance I made an anterior incision and found out my mistake. A good many of these cases are taken for acute appendicitis. This acute onset of symptoms suggests to me more a pneumonia or grip than any of the intra-abdominal suppurative lesions. We can diagnosticate it more easily in the early stages from appendicitis, from acute cholecystitis, from subphrenic abscess, or abscess of the liver, than from the acute infectious types of disease like pneumonia and grip. It is rare, in appendicitis, that we have a temperature of 104-5°. The same is true in regard to other intra-abdominal conditions. I have seen cases of mild type upon which we have not operated. I recall one case I saw in consultation with Dr. Janeway of New York, of a young man, with symptoms of grip, who had a sudden rise of temperature to 103°, with pains in the back, loins, and extremities. He presented the picture of an acute grip. On careful examination it was found that he had tenderness in the left costo-vertebral angle. This was the only sign. The abdomen and lungs were negative. On examining the urine, we found he had slight pyuria; the urine was full of bacteria, later found to be colon bacilli. We made a diagnosis, then, of probable multiple septic infarcts of the left kidney, due to colon bacillus, but did not advise operation, as it was not an extremely virulent case. Within three or four days the condition ameliorated; he began to get better; the temperature was lower; tenderness began to diminish, and also the amount of pus and albumin in the urine began to diminish. This was followed by excessive fever, shooting up of the temperature, increase in the amount of albumin in the urine, scantiness of urine, and tenderness over the right kidney. We had exactly the same course with the right as with the left kidney. We did not operate. We had examination of the blood made and found colon bacillus. The patient recovered completely, after several weeks. Some of these milder cases will recover under expectant treatment, or possibly under some milder form of treatment than that which I have outlined. In a case to which I called attention, the temperature was between 101° and 102°; there was a rather tardy increase in the symptoms. We did a multiple nephrotomy, and, in that case, I made up my mind that I could, if necessary, go in later and remove the kidney; and although convalescence was slow, the patient made a complete recovery.

Pathologically, in some of these cases we get a bacterial embolus of one of the arteries. If in the terminal arteries, we get a distinct triangular infarct. In the other cases, we have a smaller mass of bacteria, which is not arrested in the arteries, but the capillaries. In the former type we have large triangular infarcts which cause destruction of the kidney; in the others we have small, minute dots studding the kidney, and in many of these cases the true nature of the lesions is not appreciated, until we have made microscopic examinations. The microscope will show a large number of these infarcts in the capillary vessels. In the matter of treatment one will have to be guided by the fact of the virulence of the onset, coupled with the further fact that, immediately after this virulent onset, we have a continuation and increase in symptoms. If a patient has a temperature of 104-5°, and that temperature on the second day continues to go up and the pulse-rate to increase, and the condition is progressive, the indications are for nephrectomy. If, on the other hand, the temperature starts at a lower point, and the progress of the case is slow, or the temperature is stationary for two or three days, we can afford to delay operation. In all those cases in which we did nephrectomy, we had to do with very, very sick patients. I never saw a

patient as ill as the little child of three who recovered from operation. It was so ill that when it was held over the shoulder its head would hang down like that of a dead child. Apparently there was absolutely no sign of vitality. The child was in a desperate condition. Were it not for a speedy operation the child would have died on the table. It was a long-neglected case. It was operated upon fourteen days after it was first observed.

A joint meeting of the Chicago Medical and Chicago Pathological Societies was held March 21, 1906. The president of the Chicago Medical Society, Dr. C. S. Bacon, was in the chair. Dr. Fenton B. Turck read a paper entitled "Experiments in Producing Artificial Ulcers and Genuine Induced Peptic Ulcer."

PRELIMINARY REPORT ON ULCER OF THE STOMACH: PATHOGENESIS AND PATHOLOGY.

EXPERIMENTS IN PRODUCING ARTIFICIAL GASTRIC ULCER AND GENUINE INDUCED PEPTIC ULCER.

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(Abstract.)

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Before taking up the subject of his own experiments the author reviews the methods adopted by previous investigators in producing peptic ulcer. All of their methods are classified under six main heads, e. g.: 1, Mechanical and physical injury; 2, chemical injury; 3, general dysemia; 4, disturbances of local circulation; 5, injuries to nerves and nerve centers; 6, local infection. Ulcers were produced in many cases. But these artificial methods were either no other than would cause ulcer formation in any part of the body, or they were foreign to conditions present in ulcer of the stomach in man.

With some modifications the author carried on similar experiments in producing artificial ulcers, following out, at first, the methods of mechanical and chemical irritation, later taking up injections of toxins, then the question of metabolic disturbances, and, finally, the problem of the genuine induced peptic ulcer. Mechanical and chemical irritation failed to produce ulcers, even with such radical means as the feeding of mustard oil for fourteen months. The possibility of systemic disturbances, altered metabolism, impaired nutrition being etiologic factors in the production of ulcer led to the experiment of confining animals in very close quarters for a long period of time. Of the 96 guinea-pigs and 36 rabbits used in this experiment, all the rabbits died, while 6 guinea-pigs survived nine months of confinement. Two genuine peptic ulcers were found in the six surviving guinea-pigs.

These induced ulcers, produced for the first time in the author's long series of experiments, suggested the possibility that systemic conditions were important factors, that alterations in the toxic state of the alimentary canal, with consequent changes in the blood, might play some rôle in the formation of the ulcer. To modify, then, the bacterial status of the alimentary tract, experiments were begun in introducing cultures of bacillus coli communis into the circulation and into the stomach. The toxin of bacillus coli being intracellular, suggested the experiments of using killed as well as living cultures.

Intravenous inoculations of dogs and rabbits with cultures of bacillus coli for a long period of time (one month to six months) failed to produce ulcer of the stomach. But it was found that artificial ulcers made by removing portions of the mucous membrane of the stomach did not heal in four cases out of the twenty animals receiving the above inoculations. Genuine induced peptic ulcers were produced, however, in every experiment in which cultures of bacillus coli were fed to dogs. Bouillon cultures of this organism were fed daily in increasing amounts, from 50 c.c. to 2,000 c.c., for two to four months, in connection with an ordinary meat diet, and in one case with meat extractives. During the course of the experiments, observations were made of the blood changes, such as the

agglutinating, hemolytic and coagulating power, the bacteria in the blood and stomach, the systemic disturbances, the evidences of infection, the symptoms of ulcer, as pain, hemorrhage, etc. It was found that the dog's serum agglutinated bacillus coli in high dilution, that the coagulating time of the blood was slower, that hemolysis was present, that bacteria were at no time found in the blood, that few, if any, symptoms of systemic disturbance appeared. In one case, where death resulted from hemorrhage from a pyloric ulcer, symptoms of internal hemorrhage developed a few days before death.

Postmortem examination revealed ulcers in either the stomach or duodenum, the number varying, however, from a few in the duodenum to numerous typical peptic ulcers in the stomach. Histological examinations were made of the ulcers in various stages of their development, and of the liver and kidney. The chief points of interest noted in this study were: 1, Catarrhal condition of the mucosa; 2, local necrosis of the cells; 3, breakdown of the glandular structures; 4, disappearance of the chief cells; 5, marked hyperplasia of the parietal cells, which were large and prominent; 6, vacuolization of the parietal and chief cells; 7, complete degeneration of the cells; 8, no inflammatory reaction, such as round cell infiltration, either surrounding or at the site of the ulcer.

The factors concerned in the production and persistence of ulcer of the stomach and duodenum appear from the author's experiments to indicate a dual condition. There seems to be some toxic condition produced, which overcomes natural resistance, resulting in cytolysis, and possibly some chemical substances formed within the alimentary tract, which, when absorbed, may neutralize the protective bodies in the blood and tissues resulting in autocytolysis.

CONCLUSIONS.

1. Ulcer of the stomach and duodenum can be produced in dogs by feeding bacillus coli communis for a variable length of time.

2. We have now for the first time a firm basis for the unraveling of the finer or underlying etiology of ulcer.

DISCUSSION.

Dr. Ludvig Hektoen:—I suppose that the question which is uppermost in the minds of those who heard Dr. Turck's paper is the relation between induced ulcer in animals and spontaneous peptic ulcer in the human being. There are many points of resemblance. The form of the two kinds of ulcers corresponds fairly well, but with reference to location the similarity is less striking, perhaps on account of the multiplicity of the induced ulcers. Both varieties may heal by the formation of connective tissues; both may lead to severe hemorrhage and to perforation of the stomach with secondary peritonitis.

As regards the histology of the ulcers we note that the experimental ulcers correspond closely to the spontaneous in so far as there is not present any marked typical inflammatory changes; at least not in the earlier stages of the formation of the ulcers. The interesting and striking proliferation of the acid cells in the vicinity of the experimental ulcers does not find any analogue in the spontaneous ulcers so far as I know; but the histology of the human ulcer, in its various stages, has not been worked out as fully as it might be. It is rather infrequent that one obtains ulcers, particularly in the early stages. Most of the ulcers examined present only the later stages. This condition of the acid cells in human ulcers merits special attention. The causation of the human ulcer is usually stated dogmatically somewhat as follows: It is the result of autodigestion, due to disturbance in the nutrition of the cells on account of various conditions, such as hemorrhage, stasis, anemia and local infection. In Dr. Turck's experimental ulcers in the dogs all these conditions appeared to be absent; there is no hemorrhage, no stasis, no anemia, no infection in the ordinary sense in which we use the word, namely, to indicate lodgment and growth of pathogenic microbes. It is consequently necessary to assume that in these experimental ulcers the products of the colon bacillus, either directly or indirectly, lead to local disintegrative changes that eventually produce ulcer. Just how these changes are produced, whether by suspension of the anti-autodigestive mechanism or otherwise, remmains to be seen.

The specimens shown are certainly most interesting, and I would congratulate Dr. Turck upon having devised a method which promises much for the study of the experimental pathology of the stomach.

Dr. Wm. T. Belfield:—It would seem that the research which has been briefly sketched here this evening should have been made in Germany, because we are accustomed to have such things emanate from European laboratories, where men are paid to devote their lives to such work and are provided with every facility therefor. I have had the privilege of seeing Dr. Turck's work at different times, and I have been deeply impressed with his zeal, enthusiasm and critical analysis of his own work. So far as I know, he has furnished for the first time the proof that ulcers of mucous membrane can be produced by blood intoxication, and, incidentally, the further proof that one such toxin is that of the bacillus coli communis. The practical value of that, as he himself has said, remains to be determined. We have known, in a general way, that ulcers of different mucous membranes, especially of the stomach, duodenum and bladder have been produced by various poisonous agencies, such as those of septic blood infection, the toxemias of chronic nephritis and of certain metallic poisons, like the various mercurials, as well as by extensive burns; but we have had no definite knowledge as to the agents whereby ulcers are produced.

The subject interests me, especially because of the occurrence of stomach-like ulcers in the bladder, in fact, in the entire urinary tract. It is one of the conquests of the cystoscope that we have learned to recognize, as not infrequently occurring in the bladder, a simple round ulcer similar in appearance to the round peptic ulcer of the stomach. These ulcers are never detected, perhaps never suspected, except through the cystoscope, because they are not accompanied by the presence in the urine of those characteristic changes which we look on as the inseparable accompaniments of an inflammatory process, viz., pus, blood and bacteria. In a few cases these ulcers have perforated into the peritoneum, with a consequent fatal peritonitis; and the histological findings were similar to those of the stomach ulcer, no evidence of a local inflammatory process, no evidence of bacterial invasion. It is interesting, clinically, that round ulcers have been found in the stomach and bladder of the same individual, a strong suggestion of their common origin. The round ulcer of the bladder usually heals spontaneously, as, no doubt, the stomach ulcer commonly does. But whether the scar of the bladder ulcer may be the seat of a malignant process, as is the case with the stomach ulcer, has not yet been determined.

Adjourned.

A joint meeting of the Chicago Orthopedic and Chicago Medical Societies was held March 28, 1906, with the president of the Chicago Orthopedic Society, Dr. Wallace Blanchard, in the chair. The program consisted of a symposium on Tuberculosis of the Hip. Papers were read as follows: 1. "Etiology and Pathology," by Dr. E. W. Ryerson. 2. "Diagnosis and Differential Diagnosis," by Dr. John L. Porter. 3. "Atrophy and Adduction Deformities," by Dr. Wallace Blanchard. 4. "Mechanical and General Treatment," by Dr. John Ridlon. 5. "Surgical Treatment," by Dr. A. B. Hosmer. The symposium was discussed by Drs. M. L. Harris, Edward H. Oschner, Frederick Mueller, Norman Kerr, E. W. Ryerson, Wallace Blanchard, John Ridlon, William Fuller, M. L. Harris, John L. Porter, and A. B. Hosmer, after which the meeting adjourned.

DISCUSSION.

Dr. M. L. Harris:—There are a few matters connected with this very excellent symposium which seem not to have been touched upon, or touched upon very lightly. They are very important ones, because they will change somewhat the picture of this disease, which has been portrayed to-night. The only remarks touching upon this subject which I remember to have heard were the one made by Dr. Ryerson that the mortality was 52 per cent., and the one made by the president, Dr. Blanchard, that the patients whose pictures he presented had been under treatment four years. If we make a little more prominent these two

points, namely, that the mortality is extremely high, and that the time of treatment is extremely long, we have indeed a very gloomy picture. Watson-Cheyne says that the average treatment in 386 cases was three years. Of those that recovered, over 15 per cent. died of tuberculosis of the lungs and of the meninges. Others give practically the same statistics. During the most favorable period of life, that is, the first ten years, Koenig, out of 720 cases, had 65 per cent. recoveries and 35 per cent. mortality.

There are a variety of forms in which tuberculosis affects bone—the tubercular focus, the tubercular sequestrum, the tubercular infarct, tuberculosis sicca of Volkmann, and diffuse tuberculosis. While it will be admitted that it is possible for all of these forms to undergo spontaneous cure, the probabilities of a spontaneous cure vary a great deal in the different forms; not only the probabilities of a spontaneous cure, but the length of time necessary to complete a cure varies greatly. The area infected by tuberculosis is primarily in all of these cases a pure tubercular infection. It is unmixed infection; there are no organisms present except the tubercle bacillus. That being the case, it must be acknowledged, theoretically, at least, that if we can remove completely the tubercular focus, the patient will recover in the space of time ordinarily required for a simple fracture or any injury to the bone. And such is the case. While the tubercular focus may undergo spontaneous cure without any permanent damage to the joint, a tubercular infarct, which almost always affects the epiphysis, and therefore involves the joint, recovers usually with fixation. Ankylosis takes place because the cartilage over the tubercular infarct is always lost. The primary focus of tuberculosis being infected by no other organism than the tubercle bacillus, there should be no more danger in opening a joint to remove this tubercular focus than any other joint for any other purpose. We can open the knee joint for a fracture of the patella, wire the fragments, and we have no bad results. Infection very seldom takes place. We can open any of the joints and get primary union, so that we can open a joint, if necessary, in which the bone is affected by a tubercular focus, remove that tubercular focus, and get primary union. The immediate danger of this operation is practically *nil*. The danger of disseminating tuberculosis, if all the focus can be removed, is extremely slight. The results are very good.

I have operated on several cases of hip joint disease in the early stages by removing the tubercular focus completely, and in so doing I have opened the joint a number of times. I have removed a considerable portion of the neck and head, sometimes the complete head, or the epiphysis, and I have not yet had a single case of ankylosis following this operation. I will admit, it is difficult to make a diagnosis, first, as to the number of foci, because they may be multiple; second, as to the location of these foci, and third, as to the particular form with which the bone is affected. But I will give to the *x*-ray more credit than Dr. Hosmer does, because I believe that by the use of the *x*-ray we are often able to locate the focus; also to determine the number of foci, but not necessarily the variety or form of tuberculosis. In a favorable case, whether we have a single focus or multiple foci, if we can locate them, I believe it is good surgery to operate, to remove completely the tubercular focus, and close up the joint. These patients, then, instead of going through a prolonged course of treatment extending over months and possibly years at the best, will have a cure completed in so many weeks. Such a cure, I believe to be more permanent. Every case of spontaneous cure of a tubercular focus in bone is not a complete cure in the sense that the tubercular focus has been gotten rid of. The tubercular focus has been rendered latent, and that is all. It is liable to accessions at any time, and I have seen a so-called cure of a tubercular hip joint become active after thirty years of latency. These spontaneous cures are never complete cures. They may be excited into activity at any time. If we remove completely the tubercular focus and the patient recovers, he is completely cured. Therefore, the point which I would make in connection with the subject of tuberculosis of the hip is that a large number of these cases, not all, because many of them are not suitable for operation, can have their period of invalidism very materially reduced, can secure just as good,

or possibly better results, by an early operation, which will remove, completely, the tubercular focus, and that this operation will not be attended by any material risk to the life of the patient. When this shortened period of invalidism, and the completeness of the cure, are placed opposite the years of treatment, the weeks and perhaps months of confinement to bed, and months and years handicapped by extension and fixation apparatus, I think the results more than counterbalance any possible risk connected with the operation.

Dr. Edward H. Ochsner:—In connection with the differential diagnosis of tubercular hip disease, I would like to call attention to a condition which the essayists did not touch upon, but one which I have found quite a number of times. The condition was forcibly impressed upon my mind recently because a man with large diagnostic experience made a mistake in reference to this one point. I refer to the differential diagnosis between hip disease and lumbar abscess, the latter the result of a perforated appendix, a pyonephrosis or a tuberculosis of the spine. It is not uncommon to see a case suffering from tuberculosis of the hip diagnosed as lumbar abscess or vice versa. Only recently I saw a case of a lumbar abscess due to a perforated appendix, which was diagnosed as tuberculosis of the hip. It had practically all of the symptoms of a tubercular hip, except one, namely, there was no resistance to passive adduction and abduction of the thigh. In these cases of lumbar abscess there is often flexion fixation with resistance to passive extension and passive circumduction, but there is never, so far as my experience goes, any considerable resistance to passive adduction and abduction. If one will grasp the knee one can abduct or adduct it without the slightest resistance, while in a case of tuberculosis of the hip there is usually nearly as much resistance to passive adduction and abduction as there is to passive flexion or extension, providing the involvement of the hip is at all marked, and only in this class of cases is this serious mistake likely to occur.

I was very much interested in and instructed by the forcible way in which Dr. Blanchard brought out the difference between atrophy and shrinkage, and I think it is a point to which we have formerly not paid enough attention. When a patient with tuberculosis of the hip comes under my care there is always one thing that is uppermost in my mind, and there is one condition that I strive to secure, namely, good nutrition of the patient. If I can secure good general nutrition of the patient, the tubercular process is sure to be arrested and result in ultimate healing of the hip. There is no one thing which interferes with good general nutrition so much as constant pain. If untreated or poorly treated these patients are in pain night and day, day after day, and week after week, and there is nothing that so saps the patient's vitality as this constant nagging pain. If one can relieve this pain without narcotics, and put the part at rest, and make the patient comfortable, the nutrition becomes greatly improved, and just as soon as the nutrition gets better the tubercular process begins to heal. There is nothing that relieves this tubercular hip pain so quickly and so generally as absolute fixation, providing that the antagonistic muscles are put at equilibrium. If one has a painful hip joint with a flexion deformity, that hip is almost sure to remain more or less painful, even if it be absolutely immobilized, just as long as one group of muscles has a mechanical advantage over another group. If, however, the limb is placed in such a position that the muscles are in absolute equilibrium, all the muscles being placed at the same mechanical advantage, the group which has been contracted will soon relax. This point is not well enough comprehended and too often lost sight of in the treatment of all painful joints. When a patient comes to me with tuberculosis of the hip with pain and flexion deformity, I put the patient under an anesthetic, reduce the flexion deformity, put the antagonistic muscles at absolute equilibrium, and immobilize the pelvis and thigh in this position by a plaster-of-Paris spica. It is astonishing how quickly pain ceases in almost every instance, without any further treatment, just as soon as this condition of equilibrium and fixation is established. It is often not even necessary to put these legs in extension, the mere fact of securing muscular equilibrium and fixation being sufficient to relieve the pain.

Six or seven years ago I had a little experience with a series of tubercular spines which taught me a lesson which is applicable to all forms of tuberculosis of bones and joints. I had several severe cases of Pott's disease, which were placed in plaster-of-Paris jackets while they had pyrexia. With complete immobilization the pyrexia subsided, slowly disappearing entirely in three or four weeks. At that time I had a mistaken notion that for hygienic and esthetic reasons it was necessary to remove the plaster-of-Paris jacket every three months. As I did this I made the following observations: When the plaster-of-Paris jacket was removed for the purpose of bathing the patient, and left off for several days, the pyrexia would return. I found that it would take several weeks again before the temperature would become entirely normal, and consequently I had made the patient distinctly worse by removing the plaster jacket. Since this, I have learned that a patient can be kept comfortably clean with a plaster-of-Paris jacket in place for two years, and I have left my plaster-of-Paris hip spica in place from six to twelve months, thereby reducing the time required for the healing of the tubercular process very materially. My great objection to the use of mechanical appliances in hip disease is that they do not, as a rule, immobilize sufficiently, nor are they left on long enough at a time. The patient is constantly removing them and exposing his hip joint to harmful motion. This is impossible with the plaster-of-Paris spica; it cannot be tampered with, but actually immobilizes the joint.

At first I have the patient walk with crutches and a high sole under the well foot, applying extension at night, if there is any pain whatever. When there has been no pain in the hip joint for six months, and the patient can bear the weight on his affected limb without pain, I allow him to walk without the high shoe for another six months, and when I feel perfectly sure that the tubercular process has completely healed out, I continue the immobilization for a further six months. In this way I have been able, so far as I know, to avoid relapses.

Dr. Frederick Mueller:—Nearly all cases of hip disease which come under our observation can be classified among the cases of localized tuberculosis. Professor Eduard Albert in Vienna, as early as in the seventies of the last century, was one of the first to point out that localized tuberculosis of bone heals spontaneously in children, provided they are put under hygienic conditions. From this point of view we may say that the prognosis of a case of hip disease is good in a general sense. Also, general dissemination of the tubercular process is more rarely found in cases of hip disease than in other cases of localized bone tuberculosis, like, for instance, cases of Pott's disease. One of the first symptoms to which I should like to call attention is the position of abduction. In fact, abduction and not flexion is the first sign which we observe in a case of hip disease. Very often we see cases of beginning hip disease in which there never was any pain or restriction in motion, but if we have the child lying down on the table, we always will find the never absent lengthening of the leg by which the fold in the inguinal region appears shorter on the diseased side than on the side which is not affected.

As far as the treatment is concerned we can discriminate between the conservative and the radical treatment. Several of the gentlemen, who spoke before, alluded to two methods of conservative treatment, one of which aims to prevent weight bearing and the other of which tries to arrest motion. Lorenz, in Vienna, was the first to study these questions and pointed out that the arrest of motion, that is, immobilization, is more important for the healing of the tubercular process than extension or rest as to weight bearing. The result of this investigation was that Lorenz designed a short spica which extends only to the knee-joint, and which has been demonstrated by Dr. Ridlon to-night. Dr. Blanchard has referred to an operation which recently has been advocated by Lorenz, and which consists in the excision of the head of the femur with the capsule. This procedure will shorten the whole process and bring forth bony ankylosis of the joint in a good position. Lorenz calls this method a radical method and advocates it for cases where pain and serious symptoms set in very

rapidly, where we have high fever, and yet no external sign of the formation of an abscess. It is only in such cases that Lorenz wishes the operation to be applied, and he advocates for all other cases the conservative method of treatment. In this way we can not say that Lorenz has changed from the conservative method of treatment to the radical one, if he advocates the latter one for special cases only.

Of course, bony ankylosis is seldom found in healed cases of hip disease. I think we have not more than about 5 per cent. of cases of real bony ankylosis in healed joints, and every one who has performed operations for contractures in adduction (what the English call short-leg) knows that in almost all such cases it is possible to merely redress the deformity and to lengthen the shortened leg materially by putting it into an abducted position.

As far as the removal of the whole tubercular focus is concerned, we have to consider that it is very difficult to remove it, in fact, as difficult as it is to radically remove a malignant tumor like cancer or sarcoma. In the beginning, the tubercular focus is localized; very soon, however, it becomes larger, and we not only have a focus which is limited to one single tissue, but which infects very soon all the different tissues in the neighborhood. If we had a method of locating the tubercular focus at a very early stage, the so-called radical methods, which mean the elimination of the tubercular focus, could be advocated; but neither the *x*-ray picture, nor any other methods give any direct indication of the seat of the focus as long as it is such a small one, that it is really confined to the bone, capsule or cartilage alone.

Dr. Edward Ochsner has introduced a new term which he calls the restoration of the equilibrium by redressing the faculty position of the leg in the beginning of the disease. As far as the position of flexion is concerned this procedure can be justified. So far as the position of abduction is concerned, however, I can not advocate Dr. Ochsner's procedure. If we correct the abduction we do not only cause the patient pain, but favor the tendency to adduction, which always becomes apparent in the latter stages of the disease, and against which we have always to struggle. In other words, the keeping of the leg in abduction is the surest and easiest way to fight the tendency of adduction which sets in later on, and therefore the position of abduction which forms one of the earliest symptoms should be left alone.

Dr. Norman Kerr:—I did not expect to be called upon to participate in this discussion. I wish to say, however, that I have treated two or three cases of hip joint disease by the radical removal of the tubercular focus, and have had the pleasure of seeing prompt recovery.

I do not think sufficient stress has been placed on the pathology of this disease; it ought to elicit more discussion in a meeting like this. The use of the *x*-ray ought to be insisted on in the early stages of hip-joint disease. I think the reason why orthopedic men do not take to the radical removal of the tubercular focus is, first, because it is practically a new treatment, and, second, it has been the bad cases that have been subjected to the treatment, and these bad cases present almost insurmountable difficulties in the way of the radical removal of the tubercular focus. If the tubercular focus is not removed in a radical manner the result will not be favorable, perhaps no more favorable than it would be by the use of extension and fixation.

Dr. Ryerson:—After Dr. Harris got through speaking I thought I had been listening to a beautiful prose poem; that we could look into a hip joint, see a focus as large as the head of a pea, take a little curette, cut it out or remove it, and that is the end of it. As a matter of fact, what do we orthopedic men see, in the first place, in these cases? We see patients whose hip joints suppurate freely and disastrously, because some general surgeon has been pawing around in them with a knife, or else we see, in the early cases of hip-joint tuberculosis, such mild symptoms that the parents will not consent to a cutting operation any more than they would think of having the child's head cut off. The mother of the child will object to radical interference and say that her little boy has only rheumatism. That is what we get right along, and if we can hypnotize these patients to lie

down and operate on them radically, then I should say that treatment is preferable in some cases. Yet there is another difficulty which confronts us in that we do not know where the focus is. I have taken *x*-ray after *x*-ray, and have had them taken by good professional photographers, and yet I could not see a tubercular focus; it was there, and in a few years it made its presence evident. I agree with Dr. Harris when he says that if we can see a localized tubercular focus we should take it out. But I am not able to see that focus very often. Once in a while, when I can see the focus or foci with the *x*-ray, I find there is considerable territory invaded by the disease, so that it would perplex Dr. Harris or any other surgeon to remove all of the tubercular process. We can not always get the consent of parents to operate on these cases when it is indicated.

The mortality in uncomplicated hip disease is practically *nil*. I do not know of such a thing as a death from tuberculosis confined to the hip. I have had many cases of tuberculosis in which two or three abscesses have appeared at the side of the hip joint, which have not discharged, in which absolutely no effect was shown on the patient's constitution. In the suppurative cases, however, which have been opened, the mortality is very great. It is true there is a certain mortality from tubercular meningitis, from tubercular phthisis, from occasionally intestinal tuberculosis, which will occur whether the hip is opened or not. But we must remember that even if we do remove the tubercular focus it does not mean that the mortality rate is not going to be continued just the same, because the cervical or mesenteric glands are still there, and a patient is liable to die of tubercular meningitis after the removal of the tubercular focus in the hip joint, because that is secondary to tuberculosis elsewhere.

Dr. Wallace Blanchard:—As to the removal of the tubercular focus, Dr. Ochsner has referred to what he calls a new operation, one that we as orthopedists are not familiar with, possibly. Five years ago Dr. Taylor, of Baltimore, reported to the American Orthopedic Association something like twenty cases, and he was quite enthusiastic. Three years ago he reported again to the same association on something like forty or fifty cases, and he was not quite as enthusiastic as he was formerly, and at the last meeting of the American Orthopedic Association he had changed his views completely and said that an attempt to remove the foci usually increased the ravages of the disease. The great majority of these cases run the usual course of hip disease after the operation, which only serves to scatter the tubercular foci. Practically all the orthopedic men who were more or less enthusiastic some years ago as to the removal of the tubercular foci have changed their views in this respect very materially. Erasion of the foci has proved a failure and is no longer practiced by the best orthopedic surgeons.

Dr. John Ridlon:—I should like to say a few words in reference to the remarks made by Dr. Harris. I think we are fortunate to have a general surgeon explain his views in regard to the treatment of hip-joint disease, and for him to acknowledge that so great a surgeon as Watson Cheyne expects a death rate of 40 per cent. in the cases he treats. Apparently the general surgeons expect that mortality. It is not, therefore, so surprising that so many of these patients die. It is surprising that so many patients live when treated by the general surgeon. Many of the things we have to say must be said more or less dogmatically. Dr. Harris has been dogmatic. You have to take his say-so on the one hand and my say-so on the other hand. There is not enough time to argue it out. He led you to believe that if you could go down and remove the tubercular focus in the hip you could cure the case in the time that it would take a broken bone to heal, i. e., four weeks. Yes, if you could do it, and he led you to believe he could do it, but you can't do it. How do I know you can't do it? Twenty years ago George Arthur Wright, of Manchester, England, reported his first 100 cases of radical excision of the hip joint for early hip disease, not scraping out the tubercular focus, but removing the whole upper end of the femur and acetabulum. In going through his hospital in Manchester sixteen years ago I saw at least a dozen cases he had operated on from two to four years before, and which had been reported as cured cases. They had come back with recurrences of the disease in those hip joints. When you have

operated on a hip joint, have removed the disease, the wound is healed and the patient no longer suffers pain and is discharged, is that the end? No. It is only the beginning. True, the operation is successful, but the patient is not cured. He may never have any more tuberculosis in that hip joint, but he may have tuberculosis in a week, a month, a year, five years or twenty years after. But that is not a cured case. What is a patient with hip-joint disease entitled to? The most useful limb he can get, so that he can earn his living. The best result, functionally, from operative treatment of a hip-joint disease is worse than the worst result, had the patient with hip disease never seen a doctor.

Dr. Harris led you to believe that 40 per cent. of all cases will die if not treated. I will tell you that if they are not treated at all no more than 10 per cent. will die. He told you that he has excised hip joints and has never got ankylosis. He did not tell you that he had no loose joints. He did not tell you that he had no useless legs as the result of excision or other operation. It is the loose leg, the useless leg, that is a curse to the patient who is operated on, and not the ankylosis of the hip. He told you that in an infarction focus, where the cartilage was destroyed, the patient must have an ankylosed hip. That is not so. I have seen cases with destruction of the cartilage, where bone grated against bone, recover with normal motion. What I have seen I know; but a man who has never seen it may not believe it. He is justified in not believing it if he has not seen it. He has told you that the patients are discharged as cured by mechanical means and that the disease returns after twenty years. It is true cases are reported as cured by many men, orthopedic men, general surgeons, general practitioners, that are not cured. I saw within a year a doctor from Northern Indiana who was treated by an efficient method mechanically for a considerable time. He was pronounced cured; he believed himself cured; he had no pain; he had nothing except a little limp. There was a stiff joint, and it has remained in that condition for more than twenty years. Recently, within a year, he experienced a little discomfort in his hip; he was inclined to take to crutches again. He came to me for examination and I found that there was an infarction focus with a sequestrum as big as a marrowfat pea that had been there for over twenty years. We can have infarction which does not necessarily produce ankylosis. It can stay there for twenty or thirty years and give the patient no discomfort, and he may die from some intercurrent affection without knowing he was not cured of his hip disease. We can have patients go untreated who will apparently get well; some remain well and some have a recurrence of the disease. You may treat some of these patients mechanically and some will remain well, while others will have a recurrence of the disease. You may operate on some of these patients radically, and some of them apparently will get well, while others will have a recurrence of the disease. That is all true, and when a man says that a thing can not be because he has not seen it he is saying too much. When a man says he can remove the tuberculous disease from a patient by operating on a focus in the hip, thus rendering the patient perfectly well and safe for all future time, he makes a most extraordinary statement.

When Dr. Harris told you that he could operate on these cases and effect a cure in four weeks he ignored the work of Battle, of London, published some eighteen years ago. Battle excised forty or sixty hips, carefully watched and treated them, and found that it took just as long to cure these patients after operation by giving them mechanical support as it probably would to have cured them if they had not been operated on at all. It took him an average of three years. We can not cure all these cases; we can cure some of them. If we take into consideration the statistics of the orthopedic institutions in this country, such as the Orthopedic Hospital and Dispensary and the Hospital for Ruptured and Crippled, in New York, we will find that of the many cases that have been treated by mechanical means they do not show a death rate over 10 per cent. I would rather have a child of mine, if he had hip disease, never see a doctor than to have his joint injected with iodoform emulsion or cut into. I say this from experience. I have had a child with hip disease and I know how it feels. The

diagnosis was made by Dr. Charles McBurney, of New York. I do not want any child of mine treated by a cutting operation.

Dr. William Fuller:—I would like to say a word about tuberculosis of the hip. The term hip includes several structures, any one of which may be the starting point of tuberculosis. But as regards tuberculosis of the upper end of the femur, it seems to me to be a lesion just as amenable to surgery as does a similar condition of any other bone. A surgical operation cures tuberculosis of the ribs, the bones of the head and of the tibia, for instance, and will cure, as Dr. Harris says, tuberculosis of the hip if the diagnosis is made early enough and the operation is complete enough. Complete removal of tuberculous foci in bone or soft tissues is certain to be followed by a cure and applies to the femoral head as it does to any other bone. Failure to cure such a lesion should not argue against the operation itself, but should create the suspicion that the diagnosis was made very late and that the operation was incomplete. Many cases will have progressed, long before a positive diagnosis can be made, to that degree in which operation will avail nothing, and such cases are best managed by other means. A localized lesion of tuberculosis, superficially placed in some very accessible bone, would be attacked surgically by every surgeon, and identically the same procedure should be employed for tuberculosis of the upper end of the femur or for any other part of the hip, provided the diagnosis is early and certain. An unfortunate result in the operation for tuberculosis of the hip, even coming as it did to the family of the previous speaker and as related by him, should not prejudice the surgeon's mind against a procedure offering the only rational means of permanently curing surgical tuberculosis.

Dr. M. L. Harris:—Dr. Ridlon has said that I did not say how many flail joints I had. I did not state it because I have not had any. Not a single flail joint has followed the removal of the tubercular focus, when the diagnosis has been made early, and not a single muscular attachment has been disturbed. Every patient has had a useful joint; they have walked on them; they have movable joints and not a single case has been under treatment over six months. Dr. Ridlon can not show such results with mechanical treatment. We talked about removing the tubercular focus from the hip, not tubercular glands from the neck or chest. Every spontaneous cure of tuberculosis of the hip is not a cure, because the tubercular germs remain there in a latent condition. That is why these patients have recurrences. That is why they do not get well. The germs are there in a latent condition and the disease may start up again in twenty or thirty years. Dr. Ridlon confirmed everything I said about the spontaneous cure of tuberculosis, but he did not confirm what he has never tried, namely, an early operation on a hip joint case.

Dr. Wallace Blanchard:—I wish to say a word or two as to what we observe in the Home for Crippled Children. Over 50 per cent. of the old incurable cases of hip disease that we are confronted with have come from the general surgeons. They have been operated on, either a portion or the whole head of the femur having been removed for the erasion of the tubercular foci. These patients come back to us, continue treatment with us and are with us all the time. The local tubercular disease has been disseminated by the operation. The acetabulum and the shaft of the femur have become diseased and pus-discharging sinuses never close. That, in brief, is our experience at the Home for Crippled Children.

Dr. John L. Porter:—I would like to ask Dr. Harris how many times he has taken early skiagraphs of hips and not been able to find the tubercular focus? I have tried the same scheme in many of these early cases that present muscular spasm and flexion deformity, limp and pain, but have not been able to find any focus that would tell me where the disease is from the *x*-ray picture. I would also like to ask Dr. Harris whether he has ever invaded a joint to find a focus that he saw in the *x*-ray plate and not find it there?

I must say that Dr. Harris' statement in regard to the results he has had in the early removal of tubercular foci from the hip are remarkable. I believe that very many of the cases which Dr. Harris operated on so early and got such

excellent results would get perfectly well if they had not been operated on and were treated carefully by mechanical means, because we all of us see many of these cases that are treated successfully by mechanical means and immobilization. That is the point I wanted to make in talking about early diagnosis. We see many cases early that get so well that Dr. Harris could not tell which leg had hip disease, because the patients were treated early by mechanical measures, by careful immobilization and relieved from weight-bearing at the same period that Dr. Harris would invade the joint.

Dr. Hosmer (closing the discussion):—I would like to ask Dr. Harris if he finds it possible by radiographs to determine accurately, as proven by operation, all the tubercular foci? Furthermore, if he thinks it possible by radiographs to show any involvement of the capsule, particularly in those cases in which the tubercular process starts in the epiphysis of bone? While at a certain period there is involvement of the capsule, I do not think any man can positively settle that by any number of *x*-ray pictures. You may obtain an excellent *x*-ray picture; you may be able to locate one or more tubercular foci, but you are likely to find other foci that have broken through or have opened into the joint cavity. You have infection of the capsule and you do not know anything about it in advance, and you can not detect it macroscopically. Such cases are certainly put in extreme peril.

I do not know what the experience of Dr. Harris has been, but those cases of hip disease attended with a mortality of 40 or 50 per cent. are cases of mixed infection. It is admitted by good authority that in ordinary private practice in this country the mortality does not exceed, if it equals, 5 per cent. in mechanically treated cases.

Dr. M. L. Harris:—Yes, I have had *x*-rays taken of hips that did not show anything, and if I had a case in which the *x*-ray did not show anything I would not operate. You will remember I stated I would only operate where I could localize the focus or foci. I admit that many of these patients get well without operation. I said I would not operate on all cases. The cases to be operated on are selected. The large majority of these cases will get well under proper treatment, but the question is whether the treatment shall extend over a period of three years or a few weeks.

DE WITT COUNTY.

The De Witt County Medical Society celebrated its fiftieth anniversary in Elks' room, Clinton, Ill., April 10, 1906, President J. M. Wilcox in the chair. The minutes of last meeting were read and approved. The following were present: Drs. J. H. Tyler, Wilcox, Edmiston, Craig, Harter, Kirby, Chapin, Kohn, Davis, Zeigler, Edmonson, Dowdall, Campbell, also Drs. J. H. Stealy, of Freeport, and J. N. Dixon and E. E. Hagler, of Springfield, and Dr. Van Hook, Mt. Pulaski.

Dr. Campbell reported a case of consolidation of the lower half of the right lung, with subnormal temperature and slow pulse after the first day. Dr. Kirby reported a case of hysteria, with fever. Dr. J. N. Dixon then read an excellent paper on Diagnosis of Concussion and Compression, which was discussed by Drs. Dowdall, Edmonson and Stealy. Dr. J. H. Stealy read a classical paper on Appendicitis with Adhesions—Differential Diagnosis from Other Abdominal Inflammatory Conditions. The paper was discussed by Drs. Davis, Kirby, Dowdall, Campbell and Dixon.

The society then adjourned to a banquet dinner until 1:15 p. m., when business was resumed by Dr. Dixon reading a paper entitled A Rare Case of Traumatic Tetany, which was discussed by most of the members present. Dr. Campbell read a practical paper on Puerperal Sepsis, which aroused an exceedingly vigorous and interesting discussion. As all the visiting and out-of-town physicians wished to visit the new Warner Hospital before the trains left, the society postponed the election of officers and the retiring president's address until next meeting.

A. E. CAMPBELL, *Secretary.*

JASPER COUNTY.

The Jasper County Medical Society met at the Courthouse, Newton, Ill., April 7, 2 p. m. The meeting was due to the coming of Dr. J. N. McCormack, organizer for the American Medical Association, who delivered two very interesting and instructive addresses to the physicians and the laity of Jasper County in the afternoon and evening.

At the close of the afternoon meeting the chair appointed a committee of three to nominate officers for the coming year. At the evening session the following officers were elected: President, Dr. H. S. Hinman; vice-president, Dr. John H. Maxwell; secretary, Dr. James P. Prestly; treasurer, Dr. W. E. Franke; board of censors, Drs. E. E. Burton, W. A. Wens, S. P. Berns. Dr. McCormack's evening address was listened to by a good audience, which made up in rapt attention what it lacked in numbers. Ministers and lawyers responded in three-minute talks of an appreciative nature. The society feels satisfied that Dr. McCormack has made a good impression upon the public that will eventuate in good results. Drs. Rafferty and Barlow, the latter our worthy councilor, were welcome visitors.

JAMES P. PRESTLY, *Secretary.*

JERSEY COUNTY.

The society met at the Commercial Hotel, April 4, at 7 p. m. Members present were Dr. J. S. Williams, in the chair, Drs. Barnett, Van Horne, Proctor, Erwin, Gledhill, Gibberson, Hunt and Bohannan. The minutes of the previous meeting were read and approved. The election of officers for the ensuing year resulted in the choice of Dr. A. K. Van Horne for president, Dr. A. A. Barnett for vice-president and Dr. H. R. Bohannan for secretary-treasurer. The censors for the following year are Drs. J. S. Williams, H. R. Gledhill and A. D. Erwin. The physicians then retired to the banquet hall, where supper was served, after which Dr. Norbury, of Jacksonville, read a very interesting paper on the motor and sensory disturbances of the spinal cord, which was listened to with much attention by all present.

There were present at this meeting sixteen physicians, eight nurses and two newspaper reporters. From out of town were Drs. Norbury and Herriott, of Jacksonville; Drs. Cook and Bowman, of Alton, and Dr. Smith, of Godfrey. Dr. A. M. Wiles was also in attendance. The history of the Jersey County Medical Society was read by Dr. A. K. Van Horne, who is the only charter member now living.

A. K. VAN HORNE, M.D., *Secretary.*

HISTORY OF THE JERSEY COUNTY MEDICAL SOCIETY.

A. K. VAN HORNE, M.D.

Having been asked to relate the organization and history of the Jersey County Medical Society, and not being able to find any of the books and archives of the society, I shall have to depend on my memory of the organization and later on some newspaper clippings kindly furnished me by Dr. Barry.

On the first Saturday in April, 1856, as I was about to leave for my father's farm, Dr. Herriman notified me that the physicians of the town and county were to meet at Dr. White's office for the purpose of organizing a medical society, and asked me to remain and attend the meeting. I accepted the invitation. The meeting was called to order by Dr. E. A. d'Arcy, who was chosen president, and Dr. L. A. Brewster as secretary-treasurer.

The doctors present from Jerseyville were d'Arcy, Knapp, Perry, Hutchinson, Hamilton, White and Herriman; from Fidelity, Bringhurst, Jay and Dennison; from Grafton, Vietch, and from Fieldon, Wynans.

I was urged to join the society, but objected, as I didn't expect to locate here, but in some other place, where people had not known me from childhood. Dr. d'Arcy insisted that I should be able to tell people where I did locate that I was a member of my home society, and I could not afford to miss this opportunity of associating myself with our home medical society. This appeal of Dr. d'Arcy was

unanswerable and I joined and gave one of my twenty dollars, which was all I had left after getting home from lectures. This was hardly enough to start out to hunt a location to practice medicine, therefore I decided to try my luck here and have been here ever since.

Our meetings, as I remember them, were held quarterly for a time and then monthly, which gave a better attendance. After the first year Dr. A. R. Knapp was elected president and Dr. Brewster continued to hold the office of secretary and treasurer for a number of years. Dr. Bringhurst moved to Jerseyville and formed a partnership with Dr. White. Drs. Perry and Hamilton, Drs. Harriman and Brewster were also partners in those early days.

We invited in the brother physicians from Green and Macoupin Counties and later from Morgan County, and then we would meet with them at their home towns. The Medical and Surgical Society of Western Illinois was organized at Whitehall in 1882, I think. This society was composed of physicians of Green, Morgan, Madison and Jersey Counties. We had many profitable and pleasant meetings, and while this district society, to some extent, took the place of the Jersey County Medical Society, it never supplanted it. We never failed to have annual meetings and have usually had meetings either quarterly or monthly.

Among our membership I remember with much pleasure the names of Drs. A. R. Knapp, E. A. d'Arcy, James Perry, H. C. Herriman, L. A. Brewster, James Bringhurst, J. L. White, Hutchinson, James Vietch, of Grafton; Wynans, of Fieldon; our visiting brother, Dr. Samuels, of Carrollton, who was what every physician ought to be—a perfect Christian gentleman every day in the week and every hour in the day—and also Dr. Clinton Armstrong, of Carrollton, who was a good match for Dr. Samuels. Later on we had Drs. E. L. Herriott, of Grafton, and J. T. Curtis, of Otterville, also Dr. J. S. Williams, of Otterville, who, I am pleased to say, is still with us and resides here in Jerseyville. Dr. Peter Finity, of Kane; Dr. John Ash, of Brighton, and his son, John Ash, Jr., and also Dr. C. A. L. Reed, of Fidelity, now of Cincinnati, are counted among our worthy members. Dr. W. O. Langdon, of Delhi, now of Springfield, was for a number of years an active and important member, as were also Drs. Charles Edgar, G. Gallaton Lyon, Caleb DuHadway and John B. Hamilton. Dr. Hunter, of Fidelity, and Dr. J. L. Ward were active members in 1882.

At the annual meeting in 1883 Dr. DuHadway was elected president; E. L. Herriott, of Grafton, vice-president, and E. L. H. Barry, secretary and treasurer. Drs. Scott, of St. Louis, and Harvy, of Fieldon, were elected to membership at the meeting of the Jersey County Medical Society, Aug. 6, 1883. Members present: Drs. McAdams, of Newburn; Curtis, of Otterville; Herriott, of Grafton; J. B. Hamilton, of Kane; Barry, Ward, Van Horne and J. O. Hamilton, of Jerseyville. Mr. Thomas J. Selby read a paper on the duties of the medical witness and expert, which was clearly and thoroughly delineated. With the death of Dr. J. L. White, of Bloomington, the last of the charter members of the Jersey County Medical Society, except myself, have passed away.

Our present members are Drs. J. S. Williams, A. A. Barnett, L. T. Waggoner, H. R. Gledhill, H. R. Bohannan, M. B. Titterington, E. L. H. Barry, A. M. Cheney, A. A. Shobe, Joe Enos, A. S. Hunt, J. A. Flautt, J. Tidball, Wesley Park, A. D. Erwin, O. O. Giberson, John R. Ash, Frank Finity and A. K. Van Horne. The Jersey County Medical Society has been favored at times with scientific papers from brethren of neighboring towns, as Dr. Emory Lanphear, of St. Louis, Dr. Carl Black, of Jacksonville, and others. For a time our society was in a lethargic condition. During 1903 and 1904 we had only four meetings, but during the last year we have had a meeting each month, and I am pleased to say that our society is in a good healthy condition.

M'LEAN COUNTY.

The annual meeting of the McLean County Medical Society was held in the assembly hall of the Illinois Hotel at 6 o'clock, Thursday evening, April 5, 1906. The following resolutions, introduced by Dr. J. B. Taylor, chairman of the committee on health and sanitation, were adopted:

"*Resolved*, That this society strongly recognizes health conditions as of first importance to the city.

"*Resolved*, That in view of the known and demonstrated beneficial relation of municipal destruction of garbage by fire to municipal health, and in view specifically of the fact that installation of that system in reliable form in Bloomington for the coming warm season will save lives as well as add to the facilities for maintaining the good appearance of the city, we urgently request the mayor and his associate officers to make such installation so as to be of service the present year.

"*Resolved*, That the secretary be instructed to forward a copy of these resolutions to the mayor, respectfully making this request."

There was an election of officers for the ensuing year, which resulted as follows: President, Dr. Thomas W. Bath; vice-president, Dr. Albert W. Meyer; secretary-treasurer, Dr. O. M. Rhodes; censors, Drs. J. K. P. Hawks, E. L. Brown, J. L. Yolton; delegate to state convention, Dr. E. Mammen; alternate, Dr. Frank Wakefield.

A case of extrauterine pregnancy was reported by Dr. Rhoda-Galloway Yolton and the fetus exhibited to the society. The report is as follows:

A CASE OF EXTRAUTERINE PREGNANCY.

Mrs. H., German, aged 38, married seven years, never was pregnant before; had always had pain and headaches at her menstrual period. Menstruated last May 3, 1905.

I was called to see her July 26, 1905. She was having pain in the pelvis and had vomited some and had some fever. I made a pelvic examination and found the uterus was very tender and fixed, with an exudate present. I gave morphin, cathartics, and ordered hot douches. I called the next day and found her more comfortable. I saw her every second day for a couple of weeks, when the tenderness and pain had about gone and I diagnosed pregnancy. I was called again October 14. The patient was having some pain and had felt life. I did not see her again for some time, but told the husband to watch her closely and keep me posted as to her condition, for I feared extrauterine pregnancy. He reported one day that a membrane had come away. I was disappointed that he did not bring it to me, for I believed it must have been the decidua. The patient felt life for over one month, or until near the end of November, when she sent me word that she had ceased to feel life. She was feeling well, so I asked the husband to keep me posted, and after nine months had passed I made an examination, passed a sound, found the uterus of normal length and a tumor on the left side and another to the right side of uterus. I then asked for an operation, but first asked for counsel. Dr. Chapin was called in and advised an operation for removal of the tumor. Later Dr. Edson Hart was called and he also advised operation. The patient was sent to Brokaw Hospital, March 11, 1906, and I operated March 12, assisted by Drs. Hart and J. L. Yolton. The fetus lay to the left side, free in the abdominal cavity, except for some cobweb adhesions, and was covered by an adherent membrane. The placenta was attached to the right broad ligament. The patient made an uneventful recovery, with the exception of a little rise of temperature and pulse on the sixth and seventh days, due to bronchitis. She left the hospital in just three weeks from the day of operation. I was slow in recognizing extrauterine pregnancy, for I expected to find much more severe symptoms than I did here, and early diagnosed my case pelvic peritonitis, with exudate, and treated it accordingly.

The committee on arrangements was instructed to invite the various societies of the city to be present at the address to be given by Dr. J. N. McCormack, April 14, 1906.

Dr. E. Wyllys Andrews of Chicago, was a guest of the society and essayist of the evening. His subject was "The Year's Progress in Surgery." Among many interesting things Dr. Andrews spoke of the stimulating effect of adrenalin in anesthesia; the dry cocain method in spinal anesthesia; the intraspinal and subdural injection and injection into nerve plexuses of antitoxin in tetanus; the

end-to-end suture of vessels and consequent transplantation of the heart; dislodgment of foreign bodies from the esophagus by distention with gas by Seidlitz powder; massage of heart through the abdominal cavity in chloroform collapse; ligation of hepatic artery, enabling more extensive resection of liver; anesthesia from injection of scopolamin, gr. 1/100, and morphin, gr. 1/6, at intervals of four, two and one-half hours before operation; the effect of this anesthetic is ideal, but the report of sixty cases with two deaths does not seem to warrant its risk. The society feels specially honored in having such men as Dr. Andrews address it.

This ending the business meeting, the society adjourned to the ordinary of the hotel for dinner.

O. M. RHODES, *Secretary.*

MORGAN COUNTY.

A meeting of physicians resident and practicing in the city of Jacksonville was held in the medical room of the Library, March 31, at 8 p. m. Formal invitations to attend this meeting were issued by the secretaries of the Morgan County Medical Society and the Physicians' Club of Jacksonville without reference to membership in either of these bodies. There were twenty-one doctors present. Dr. Pitner was elected chairman and Dr. Reid secretary. The chairman called the meeting to order and stated the object thereof. He stated that a meeting of committees from certain churches, the Hospital Aid Society and the Morgan County Medical Society had been called to consider the reorganization of Passavant Hospital of this city at an early date, and the present meeting of physicians was called to consider the advisability of action on the part of the medical profession in view of their interest in the hospital.

Dr. Hairgrove spoke of the action of the directors in Milwaukee and their proposal to place the concern in the hands of a local board under proper restrictions and conditions. Dr. Black proposed for consideration a set of resolutions, which were freely discussed and voted upon, section by section, and after sundry amendments were unanimously adopted. The following are the principal points:

1. There should be a medical staff, composed of every duly licensed reputable physician in the city, which should formulate rules for nursing the sick, for conducting the training school for nurses and that the staff itself should be the sole judge of reputable and honorable conduct among its members.

2. Admission to the hospital should be through application to the president of the staff, and all business of the hospital pertaining directly to care of patients, training of nurses, etc., be under the direct supervision of the president of the staff.

3. That three members presented by the staff be elected by the board of trustees as members of the board of trustees, with equal powers with other trustees.

4. That the staff elect two members annually, who, with the president and the clerk of staff and dean of training school, should constitute a medical advising board.

5. That Drs. Pitner, Hairgrove and Black be a committee to represent this meeting and to present these resolutions at the coming meeting of the board of trustees of the reorganized Passavant Hospital.

By invitation of the Morgan County Medical Society, Dr. J. N. McCormack, of Bowling Green, Ky., gave an open lecture before the doctors and the public of Jacksonville at the public library, April 10. His subject was "The Relation of the Medical Profession to the Public." The meeting was largely attended, both by doctors and others, there being present twenty-seven doctors. Dr. McCormack has been heard too often by the readers of this JOURNAL to justify any attempt at synopsis. Both the doctor and his audience were immensely pleased with each other and many expressed the wish that he would visit Jacksonville again soon. After the lecture the doctors present, with their wives, adjourned to the residence of Dr. D. W. Reid, where an informal reception was given in honor of Dr. McCormack.

Dr. McCormack's work in Morgan County was very arduous, and, as planned for him beforehand, meetings were held in Jacksonville and neighboring cities, requiring two and three addresses a day. In most of these places the doctor met with an enthusiastic reception.

The regular meeting of the Morgan County Medical Society was held as usual at the public library, Thursday, April 12, with President Josephine E. Milligan in the chair, eighteen members being present. Dr. R. R. Jones, of Woodson, was elected to membership. Dr. A. M. King read a paper on "Pleurisy," and Dr. J. W. Hairgrove a paper on "Empyema." These papers were freely discussed. Dr. Herbert Potts had several specimens of effusion drawn from the pleural cavity, illustrating the condition at different stages of the disease with microscopic preparations of the same.

On motion it was decided that a committee be appointed to prepare a pathologic exhibit each month in the medical room independent of the regular meeting of the society.

Dr. T. J. Pitner, as chairman of the committee on reorganization of Passavant Hospital, reported the work of that committee. His committee had met as directed with the board of trustees, and a committee had been appointed to frame a set of by-laws for the reorganized hospital, and his committee had decided to present the resolutions at the coming meeting of the said by-laws committee instead of at the meeting of the board of directors. They would be so presented and further action of the committee reported later.

The following resolution was adopted:

"*Resolved*, That it is the opinion of the members of the Morgan County Medical Society that in reorganizing Passavant Hospital the by-laws should provide that the medical staff should be represented on the executive committee of the board of trustees and that the committee of this society present this resolution to the board of trustees for their consideration."

PEORIA COUNTY.

The two meetings of the Peoria City Medical Society during March were two very interesting ones and were very well attended by members of the society. At the meeting of March 6 we listened to a very interesting paper by W. A. Hinkle on new drugs, which was very freely discussed by members present. At this meeting Dr. Will, councilor for this district, called the attention of the society to the coming visit of Dr. McCormack on April 18. On motion the chair appointed a committee of five to arrange for the visit of Dr. McCormack and his entertainment while in the city. The chair appointed as this committee Drs. Gelder, Will, Collins, Kanne and Thomas.

At the meeting on March 20 the following members were present: Drs. Roberts, Whitten, Davis, Lucas, Marcy, Thomas, Brobst, Hanna, Kelly, Allison, Sedgwick, Horwitz, Gelder, McFadden, Collins, Floyd, Hayes, Kerr, Kanne, Stephenson, S. M. Miller, Wulstein and Sidley. Dr. Floyd presented a very interesting case of trachoma and pannus, showing the relationship between the eye and the nose. Dr. Sidley presented a case of complete cleft palate, on which he had operated four weeks previous with very successful results. Dr. Gelder made a report of the visit of Dr. McCormack, going into the details of his visit and giving the plans for his entertainment. On motion his report was accepted. The fee bill was acted upon and on motion of Dr. Kanne the bill was adopted as a whole. Dr. Allison made a motion that the fee bill be printed large enough to hang in an office and to appoint a committee of three to publish in the daily papers notifications to the public of certain parts of the fee bill, which was carried. The chair appointed Drs. Hayes, Miller and Lucas as that committee, to submit a report at the next meeting.

At this meeting we had the pleasure of listening to an exceedingly interesting paper by H. M. Sedgwick on Aphasia." (See page 465.)

The society is looking forward to a jubilee month in April, as we expect to have Dr. McCormack on the 18th, a paper by C. U. Collins on the 3d and Dr. Sippy, of Chicago, is to give a clinic on the 17th. The secretary is very pleased to report that the attendance at our meetings is becoming larger and that the society is in a very enthusiastic condition. F. K. SIDLEY, *Secretary.*

PIKE COUNTY.

The Pike County Medical Society met at the office of Dr. Duffield in Pittsfield at 10 a. m., April 9, 1906. Members present: Drs. J. G. McKinney, J. E. Melton, T. W. Shastid, R. J. McConnell, C. E. Beavers, J. Estill Miller, J. Smith Thomas, L. S. Lacy, H. C. Loveless, G. U. McComas, W. E. Shastid, R. H. Main, L. J. Harvey, H. T. Duffield, R. O. Smith, F. Marion Crane and J. H. Barber. Visitors: Drs. A. L. Adams, of Jacksonville, and J. N. McCormack, of Kentucky.

The society was addressed by Dr. McCormack, after which it adjourned until 1 p. m. in the circuit court room, where Dr. McCormack delivered a public address. Adjourned and reassembled at 2:30 p. m. at Dr. Duffield's office. Minutes of previous meeting were read and approved. The committee appointed at the last meeting to try to adjust pauper fees with the board of supervisors reported that no satisfactory adjustment was made. Committee discharged. On motion Drs. S. B. Peacock, F. M. Thurman and H. T. Duffield were appointed to make another effort at adjustment with the board of supervisors concerning pauper fees for medical attendance.

Drs. F. M. Thurman, of Pearl, H. B. Andrew, of New Salem, and W. W. Kuntz, of Kinderhook were elected to membership. Dr. J. Estill Miller read a paper on "The Treatment of Pneumonia," which was discussed by Drs. Thomas and Smith. Dr. W. E. Shastid addressed the society on the subject of "Adenoids." Dr. R. J. McConnell read a paper and offered resolutions which were adopted, on the subject of "Life Insurance Fees."

LIFE INSURANCE EXAMINATION FEES.

DR. R. J. MCCONNELL.

BAYLIS.

It will take no great amount of argument on this subject, I think, to pass some resolutions I have in mind on the subject of life insurance fees; at least, that is the way I feel it should be. I have been thinking over this matter some two years. About that time I was appointed medical examiner of the New York Life Insurance company, and made two examinations for them, and discovered the fact that they paid but $3.00 for an examination fee. I made no kick about it as I had no more business with them, but made up my mind then that I would make no more $3.00 examinations. During this winter, while the life insurance companies were going through the inspectors' hands and there was so much talk of retrenchment in the salaries of officers and agents of life insurance companies, I thought it very probable that the poor doctor would get it in the neck about the next fellow down the line. I found by talking with the agents for three companies, besides the New York Mutual Life, that they were all seriously thinking about cutting the examination fee to $3.00, and some even less than that. All of the agents assured me that they would do all they could to help hold the medical fees where they were. Those agents knew that without the co-operation of the doctors throughout the country their business would be uphill work, in fact, would almost surely fail, from the fact that nine out of every ten applicants for life insurance is a personal friend of the doctor, and a few words of discouragement from him would probably lose the agent the risk, and, as a matter of course, the agent wants to see the doctor paid liberally enough to enlist his sympathy in the case.

Now, as a matter of fact, we believe there are very few doctors who do not believe in life insurance as a safeguard against a day of adversity that is liable to overtake anyone, no matter how carefully they may manage their affairs. There are uncontrollable circumstances, such as sickness, accidents, bad invest-

ments, etc., that may suddenly come, and then a well matured life insurance policy is a great comfort. And I think I am safe in saying that, according to number, more doctors carry insurance than any other class of people. Aside from the fact of guaranteeing us against a day of adversity, they are worth a great deal in the way of establishing the habit of saving. If we have a premium to meet at a certain date, we will naturally save up a few dimes, quarters and dollars to meet it, and will scarcely miss them, yet when the time comes we will have enough laid away to pay our annual premium, and in the course of a few years we will have a nice little nest egg laid away.

And now, as almost every state is taking hold of the matter of life insurance and placing restrictions and safeguards upon the manner in which the companies manage their affairs, I think and feel sure there will be more life insurance written in the next five years than there has been in any previous ten. This being the case, I think that we, as a medical society, should take some steps to guarantee that our fees are not cut in twain by any company whatever, as I think we fully earn every dollar we get out of it now. To be forced to do the work for almost half seems to me to be unnecessary. Now, if this reduction was really called for it would be different, but it is not. They cry retrenchments, they say, "we must cut our salaries, we must economize." True enough, if we had been getting $100,000 as salary, or even $50,000, we could well afford to cut it down, but we have not been getting any exorbitant fees, nothing more than we could make in doing other business. Then why jump on to the doctor? There is absolutely no reason, only he is a poor, unorganized fellow that perhaps needs the money, and if the first fellow does not the next surely will, so we can get it done for $3.00 if we ask them to do it. Now that is all there is to it.

I received on February 15 a circular from the New York Mutual Life Insurance company stating that after March 1, 1906, the medical examination fees would be $3.00 for all amounts under $3,000, and $5.00 for all amounts over $3,000, and up to $25,000, and $7.50 for all amounts from $25,000 to $50,000, and $10.00 for all amounts from $50,000 to $100,000. You see this virtually cuts the business in Pike county to $3.00, for the great majority of insurance runs from $1,000 to $3,000. Enclosed with the circular was a postal card, saying to acknowledge receipt of circular and be governed accordingly. This was a pretty stiff bluff, but I did not take it, as I still have the card in my pocket and am going to keep it, at least for a while, until I see how my medical brethren receive the plan I have in mind. In case they do not take it up my cake will be dough any way, as I presume some one will notify them at headquarters that Dr. McConnell is on a strike and is trying to incite rebellion against their mandates. Now the facts in the case are these; that while I do not wish this society to think I want to compel any company to pay a certain fee, nor do I wish the companies to think that there is compulsion in the case, neither do I wish the New York Mutual Life Insurance company, nor any insurance company on earth, to send out mandatory circulars, saying, "We have decided to pay you so and so as fees." I do not feel that we are being treated right in not having a voice in the matter, for we have a voice, and a great one, if we feel so disposed to use it, and it is my firm opinion that now is the time to use it, and use it in no uncertain tones. Use it with such force that every life insurance company in our land will know that the doctors have at last awakened, and are standing for their rights and for their fees, and that we are organizing and organized, and that there is none so poor among us as to say we would rather have half a loaf than no bread, that in fact we are a unit standing for our rights, and that we consider ourselves much more indispensable to life insurance companies than life insurance companies are to us.

I doubt very much if there is a doctor in the state of Illinois that cannot get along very comfortably without the aid of any life insurance company, and, on the other hand, I think if the life insurance companies were deprived of the aid of the doctors their business would soon collapse. Then why submit to their mandates? That is just what it means, if we pass quietly over the New York Mutual Life's reduction, inside of two years there will not be a company in the

state paying any more, and why should they? If we can do the work for one company for $3.00, we can do it for all, as the work is virtually the same.

Now I trust that anything I have said in regard to this matter will not be construed differently than I have meant it, as I am a friend of life insurance and am carrying all the insurance I can afford, but at the same time I want them to understand that the doctors are a party to their companies, and an important party, and one that they will have to recognize as having a voice in the adjustment of his fees.

I wish to state in regard to what I have said that none of this is meant to apply to our local or home life insurance companies, such as the Woodmen, Protective League, Pike County Mutual, etc. While I am not very enthusiastic over this kind of insurance, I feel that it has a place and a mission to fill, and does a great amount of good, and I would, therefore, not lay a straw in its way. Any agreement the doctors see fit to make with these home companies will be satisfactory to me, as far as I am personally concerned, and the resolutions I am about to introduce do not apply to them at all, but to what are usually known as old line life insurance companies, the ones with high-salaried officers and agents, and the fellows who seek to blow about how much reduction they are making in their salaries, and at the same time are drawing enough to make us opulent in a very few years. These are the fllows that the following resolutions are intended for:

Whereas, The medical profession is responsible to a large extent for the growth and welfare of the life insurance companies of the country; and,

Whereas, We view with regret the tendency and demands of the life insurance companies to cut the prices of medical examinations of applicants for life insurance to such an extent that we, as a medical profession, do not deem it proper or wise to submit to, in the present prosperous condition of life insurance companies; therefore, be it

Resolved, By the Pike County Medical Society, that the said reduction is unnecessary and uncalled for at the present time, in view of work necessary to be done and time spent in making a proper medical examination of an applicant for life insurance, and altogether out of proportion to the fees and salaries of agents and other officers of life insurance companies, the present reduction in salaries of the head officers notwithstanding; and be it further

Resolved, By this society, that we deprecate the proposed reduction in prices for making medical examinations of applicants in all old line life insurance companies, and urge the necessity of this society holding the standard price for making medical examinations in all old line insurance companies to be five ($5.00) dollars for all examinations under the limit requiring the use of the microscope, and ten ($10.00) dollars for all examinations requiring the use of the microscope; and, be it further

Resolved, That the secretary of this society shall have a copy of these resolutions printed and sent to each medical society in the state of Illinois, urging upon them the necessity of its adoption as a safeguard against the proposed reduction in fees for making medical examinations for all old line life insurance companies.

The dues for the ensuing fiscal year were fixed at $2.00. The following officers were elected for the ensuing year: President, J. G. McKinney, Barry; vice-president, H. T. Duffield, Pittsfield; secretary-treasurer, R. H. Main, Barry; delegate, L. J. Harvey, Griggsville.

R. H. MAIN, Secretary.

ST. CLAIR COUNTY.

The annual meeting of the St. Clair County Medical Society was held at Priester's Park on Thursday afternoon, April 5, Dr. W. E. Wiatt, President, in the chair; Dr. Geo. E. Hilgard, corresponding secretary; Dr. C. W. Lillie, recording secretary pro tem; Dr. J. W. Rendleman, treasurer. The following members were present: Drs. James Sloey, A. B. Gunn, J. G. Massie, J. L. Wiggins, W. C. Spannagel, H. Hanson, H. G. Hertel, Hugo Wangelin, J. A. Grimes, James W. Twitchell, H. C. Fairbrother, C. H. Starkel, E. H. Little, Walter Wilhelmj, Carroll Smith, and Dr. H. A. Beedle, guest of the society. The report of the treasurer showed 55 members in good standing, nine who were delinquent, and six who had

left the county; the total receipts for the year were $189.77; the total disbursements were $117.05, leaving a balance on hand of $72.72. On motion the report was accepted.

The president appointed as a committee to nominate officers for the ensuing years, Dr. A. B. Gunn, James Sloey and J. G. Massie.

On motion it was decided to place the society's "Surgical History of the War of the Rebellion" in the public library of Belleville. On motion of Dr. Rendleman it was agreed that any member coming into the society after April shall pay dues only to the end of the fiscal year. Applications of Dr. H. A. Beedle of East St. Louis and Edward H. Lane of French Village were presented, and on being reported favorably by the board of censors, the rules were suspended and both were elected by acclamation. On motion Dr. Lillie was appointed a special committee to increase the membership of the society. On motion Drs. Wiggins, Lillie and Starkel were appointed a committee to provide for a meeting place.

The nominating committee made a report recommending Dr. Hugo Wangelin for president; Dr. J. W. Rendleman, vice-president; Dr. James W. Twitchell of Belleville, corresponding secretary; Dr. C. W. Lillie of East St. Louis, recording secretary; Dr. A. E. Hansing of East St. Louis, treasurer. On motion the report was received and the several candidates declared unanimously elected. On motion, Dr. C. W. Lillie was elected delegate to the state society, with Dr. W. E. Wiatt alternate.

The president appointed Drs. W. E. Wiatt, A. B. Gunn and J. G. Massie as members of the Board of Censors.

The corresponding secretary presented bills amounting to $3.15, which were allowed and ordered paid.

On motion, a committee consisting of Drs. J. L. Wiggins, Walter Wilhelmj and Carroll Smith was appointed to draft suitable resolutions regarding the pure food and drug bill. The committee offered the following resolutions, which were unanimously adopted:

Whereas, The St. Clair County Medical Society, and each member thereof, looks upon the adulteration of any food or drug as a fraudulent act; and,

Whereas, The addition of preservatives to foods is often harmful; and,

Whereas, The best interest of the consumer will be served only by branding foods and drugs according to the actual contents of the package; therefore, be it

Resolved, That the St. Clair County Medical Society urges the representative to congress from this district to use his best efforts for the passage of the "Pure Food and Drug Bill," now in the house of representatives; and that we deplore any attempt to weaken the strength of the bill by any amendment providing for a special commission to be appointed at the request of the manufacturers; and, be it further

Resolved, That we believe the bureau of chemistry of the department of agriculture fully competent to determine the qualities of food and drugs, and that any expert aid can be secured through this bureau as well as through a special commission.

C. W. LILLIE, *Recording Secretary.*

SANGAMON COUNTY.

The regular monthly meeting of the Sangamon County Medical Society was held in the Lincoln Library Monday evening, April 9, 1906. Twenty members were present. After the reading of the minutes of the previous meeting the applications of Drs. Allen and Lockwood of Virden were read and referred to the Board of Censors. The revised Constitution, which had been laid over at the previous meeting, was then taken up and adopted as a whole, excepting Article III of the Constitution and Sections 1 and 2 of Chapter I of the By-Laws. These exceptions were on the point of eligibility to membership. The much mooted question of "open or closed gate" was discussed at considerable length, and Dr. L.C. Taylor moved the adoption of Article III, which read as follows: "Eligibility.—Every legally registered physician residing and practicing in Sangamon County, who is of good moral and professional standing, and who does not support or

practice, or claim to practice, any sectarian or exclusive system of medicine, shall be eligible to membership." The motion was lost. A motion by Dr. Langdon to substitute the following article prevailed: "Every physician who is a graduate from a regular medical college, who is a resident of Sangamon County or state of Illinois, and is of good moral and professional standing, and is licensed by the State Board of Health of this state to practice medicine, shall be eligible to membership." It was then unanimously agreed to amend the By-Laws to conform to the Constitution. Article IX of the Constitution, which pertains to amendments, was amended to read as follows: "The society may amend any article of this Constitution at any regular meeting of its members, by a two-thirds vote, provided that 20 per cent. of the members are present, and provided that such amendment or amendments are not in conflict with the laws and regulations of the state society; provided also that such amendment shall have been read in open session at a previous regular meeting and shall have been sent by mail to each member ten days in advance of the meeting at which final action is taken."

A communication from the committee of the Children's Hospital Society of Chicago was read, in which it was stated that another effort will be made at the next legislature to secure an appropriation to found a state colony for epileptics. It was requested that this society furnish the committee with information concerning the number of epileptics in this county. The secretary was instructed to furnish such information, and a committee will be appointed later in accordance with the request.

On suggestion of Dr. Kreider the chair appointed a committee to look after the society's interest in the way of a library. The chair named Drs. Patton, Monroe, Kreider, Castle and Trapp. The business of the meeting covering the entire time, it was voted to have Dr. Brittin's paper at the next meeting. The meeting closed in order.

R. D. BERRY, *President.*

C. R. SPICER, *Secretary and Treasurer.*

VERMILION COUNTY.

The Vermilion County Medical Society met April 9, 1906, in the City Hall. Minutes of the March meeting adopted. A special committee reported that they had succeeded in drafting an ordinance and having it passed by the city council. This ordinance provides for the proper killing, dressing and preparing for the local market of all fish, game or fowl. The Board of Censors reported favorably on the names of Geo. Steeley of Danville and L. B. Russel of Hoopeston, followed by their election to membership. The paper on "Ophthalmia Neonatorum" not being available, a discussion on the subject was opened by E. E. Clark, followed by others. The paper on "Asthenopia," by B. I. Poland, was well prepared and of particular interest to the general practitioner. Discussion opened by I. E. Huston and others, closed by the essayist. E. E. Clark made a motion that the chair appoint a committee to devise some plan by which the nucleus of a library may be started, which was seconded and carried. Adjourned.

E. E. CLARK, *Secretary.*

NEWS OF THE STATE

Smallpox is reported at Rushville and Benton.

Dr. and Mrs. Lester Curtis sailed for Europe April 14.

Dr. R. D. Dugan, of Illiopolis, has located in Galesburg.

Dr. S. A. Allen has moved from Chicago to Rock Falls.

Cases of smallpox are reported as present in a factory at Freeport.

Dr. T. C. Brooks, of St. Joseph, is taking a postgraduate course in Chicago.

Dr. and Mrs. C. Pruyn Stringfield, of Chicago, are taking a trip to Mexico.

Dr. and Mrs. H. E. Johnson, of Fairbury, have returned from a winter spent in Florida.

Dr. Max Reichmann has been appointed radiographer to the Alexian Brothers' Hospital.

Dr. and Mrs. William R. Parkes, of Evanston, are visiting in Los Angeles, California.

Dr. J. P. Campbell, of Winchester, has gone to Florida in the hope of regaining his health.

Four cases of scarlet fever were reported from the Chicago Parental School early in April.

Drs. Beede and Walls, of the Illinois Eastern Hospital for the Insane at Kankakee, resigned on April 5.

Dr. J. T. Kessinger has removed from Donnelson to Herrin and has formed a partnership with Dr. Dent, of that place.

Dr. George A. Wash, of Palmyra, was operated on for appendicitis at St. Anthony's Hospital, St. Louis, on April 7.

A. Monaco, a druggist on Clark street, Chicago, has been fined $100.00 for selling cocain without a physician's prescription.

The Illinois Central Railroad has declared a quarantine at Christopher, where an epidemic of smallpox is said to prevail.

Dr. William J. Huff, of Mode, has been adjudged insane and sent to the Illinois Central Hospital for the Insane at Jacksonville.

Dr. Henry Gradle, of Chicago, is spending three months in Europe. Dr. Gradle expects to attend the International Medical Congress at Lisbon.

Dr. Theodore A. Johnson, of Xenia, was assaulted by Henry Baker, who had applied for a pension and whose petition Dr. Johnson would not endorse.

Dr. Hugh T. Patrick has gone to Lisbon as one of the delegates from the Northwestern University Medical School to the International Medical Congress.

Dr. I. A. Bouffleur, who is visiting in California, delivered an address before the Long Beach Medical Society on "Drainage, Surgical and Medical," on March 28.

The Evanston Hospital has completed plans for an addition to be known as the Elizabeth Williams Maternity Hospital. The building will cost $25,000 and will be three stories in height.

S. D. Haury, a member of the senior class at Northwestern University Medical School, who had just been appointed interne at St. Francis Hospital, Wichita, Kansas, died suddenly in Chicago, from brain disease, March 18.

Dr. S. M. Wylie, of Paxton, sailed, the first of April, for Lisbon to attend the International Medical Congress. Dr. Wylie expects to spend a few weeks in London, returning about the middle of June.

Twelve applicants took the examinations for nurses and chief nurses in the State Charitable Institution, which were held March 29 by the Illinois Civil Service Commission in Chicago and at the Illinois Hospital for the Incurable Insane at Bartonville.

The following officers were elected at the annual meeting of the Rush Medical College Alumni Section of the Alpha Omega Alpha Fraternity: President, Dr. C. H. McKenna; vice-president, Dr. R. L. Sensenick; secretary, Dr. W. J. Swift; treasurer, Dr. L. A. Beaton.

Dr. John W. Tope, of Oak Park, and a Roman Catholic Sisterhood have been granted a permit by the local village board to erect a hospital in Wisconsin avenue, south of Madison street. The building will cost $100,000. This action puts an end to a strife which has been carried on for almost three years.

Dr. Hannah S. Sparrow, of Chicago, was attacked by a hold-up man recently who endeavored to rob her as she was returning from a series of calls in a tenement-house district. The doctor's cries for help attracted the attention of passengers on an electric car which was passing and saved her from injury.

Two cases of smallpox have been discovered in the Brown School, Chicago. It is reported that several hundred children who have not been properly vaccinated have been attending the school through false vaccination certificates signed by local physicians. The department of health is investigating the matter.

The Chicago Health Department reports the total number of deaths during March as 2,463, an annual death rate of 14.14 per thousand. The mortality for the first three months of 1906 was at the annual rate of 14.32 per thousand, a decrease of 6.1 as compared with the same period in 1905.

The Effingham County Medical Society held a memorial meeting for the late president, Dr. Sumner Clark, whose death was noted in the March number of THE JOURNAL. Each member of the society present made a short address regarding his acquaintance with Dr. Clark. Resolutions were adopted and a copy sent to the family of the deceased president.

The Brainard District Medical Society held its thirtieth annual meeting in Lincoln April 13. Dr. William E. Guthrie, of Bloomington, was elected president. Dr. J. N. McCormack, Chairman of the Committee on Medical Organization of the American Medical Association, delivered the principal address. The next meeting will be held at Clinton.

The Peoria City Council has passed an ordinance providing for the registration, disinfection and placarding of premises occupied by consumptives. This action was brought about by the efforts of the Peoria Association for the Prevention of Tuberculosis. The Council also appropriated $50 a month for a tuberculosis nurse, who began work April 12.

Dr. Nicholas Senn, of Chicago, left on April 4 for Lisbon, where he will deliver the oration on surgery before the International Medical Congress. Dr. Senn intends to go from Lisbon, by way of the Mediterranean, the Suez Canal and the Red Sea, to Beira, Africa, then across country to Buluwayo, from there to the Victoria Falls on the Zambesi River, thence to Cape Town, where he will take the steamer for England.

The first case of smallpox to be discovered in Chicago for a number of weeks was found, on April 6, in the case of John Miller, who recently arrived in the city from New Orleans. He was sent to the Isolation Hospital. Dr. Heman Spaulding, Chief Medical Inspector of the Chicago Department of Health, says that Chicago is now so well vaccinated that the only cases found are those brought in from other cities.

Dr. C. W. Lillie, of East St. Louis, who for the last eleven years has been secretary of the faculty and professor of the Principles and Practice of Medicine of the St. Louis College of Physicians and Surgeons, has resigned his chair, to take effect at the close of the present session. Dr. Lillie will devote himself to the treatment of tuberculosis and the general improvement of sanitary conditions in East St. Louis.

The Cook County Board is having difficulty in making the appointments for internes to the Cook County Hospital. A year ago last December an apportionment was arranged by which graduates of regular medical schools were to have twenty-two interneships; homeopaths, five, and eclectics, five per year. When the results of the examination were announced, it was found that the thirty-two applicants who ranked the highest were all graduates of regular schools; that only three eclectics were on the eligible list, and that no homeopaths had qualified. It is proposed, for this year, to make the homeopath and eclectic appointments under the six months' clause of the Civil Service Act.

James F. Ferdon, whose performances, under the name of Brother Paul, or the "Great Paul," as an itinerant healer and vender of drugs, have been noticed in previous issues of THE JOURNAL, was arrested April 6, at Chicago, through the efforts of the Illinois State Board of Health and taken to Freeport, where he was confined in the county jail. His imprisonment is due to prosecution and judgments obtained against him by the State Board of Health for violation of the statutes of Freeport in August, 1905, the fines amounting to about $1,700. Following the prosecution, Ferdon left the state and has been doing business since

that time in several western states. He returned to Chicago in April and was making plans to resume his business at Rockford when the state's attorney of Stephenson County learned of his whereabouts and procured his arrest.

NEW MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION.

During the month of April, the following members of the Illinois State Medical Society became members of the American Medical Association:

Bigelow, Frederick Egbert, Chicago.
Capel, A. B., Shawneetown.
Clark, J. A., Chicago.
Dawson, J. A., Chicago.
Diamond, I. B., Chicago.
Fleming, James L., Chicago.
Giles, W. N. Watagа.
Harms, Henry, Chicago.
Higgins, S. G., Chicago.
Holmes, Albert G. H. Chicago.
Laftry, T. D., Chicago.
Learned, Clare Sumner, Chicago.
MacDonald, J. W., Aurora.
McGann, M. E., Joliet.
Malbridge, L. P., Decatur.
Maschek, F. J., Chicago.
Mendoza, A. H. De, Chicago.
Nelson, Bernard, Chicago.
Pattison, H. A., Benld.
Reis, Henry, Jr., Belleville.
Schussler, H. K., Chicago.
Sherman, P., Shawneetown.
Simpson, J., Morrisonville.
Strauch, A., Chicago.
Tuite, John E., Rockford.
Welfeld, J., Chicago.
Welton, C. B., Peoria.
Willingham, R. H., Elizabethtown.

MARRIAGES.

LESTER CURTIS, M.D., to Mrs. Mary B. Hibbard, both of Chicago, April 11.

WALTER W. OVERFIELD, M.D., Forreston, to Miss Grace Knepper, of Rockford, March 20.

DEATHS.

HARRY MCKENNAN, M.D., a graduate of the University of Michigan, 1889, member of the Edgar County and Illinois State Medical Society, secretary and treasurer of the Æsculapian Society of the Wabash Valley, died at his home in Paris, March 30, of pneumonia.

MEDICAL EDUCATION AND SCHOOLS.

Editor Illinois State Medical Journal.

THE JOURNAL of December contains an editorial regarding the diminution of medical students in attendance at our medical schools. O what a blessing! Please permit just a few words more in addition to your own.

Things medical in this country are certainly not yet what they should be. We have advanced, but there is much more room for improvement. First, we should have a fixed uniformity of preliminary educational requirements. Second, we should have uniformity in our medical schools. We need less quantity and more quality. Things medical should be taken still more seriously. Let us have less, but better men and institutions. It must occur to any one that in such countries as Germany, Switzerland, France and Austria, where medicine is at its best, different conditions obtain. There we find no competition of quantity, but of quality, and the ranks are well filled at that. In Berlin, Vienna, Paris and Berne we find but one medical school, not under private, but under government control. There is no reason why our best medical teachers could not and should not unite to form but one school in one community. This would be a healthy step to better things. We need it; let us have it.

The conscience of the medical profession must be appealed to wake up to a new and better organization of things medical in this country, to entertain and maintain a higher and more stable standard of medical men to be committed to the study and practice of the sciences and arts of medicine and surgery. Be it suggested that as long as we have no representation in the national presidential cabinet that the American Medical Association, in conjunction with the medical societies of the different states, come to a mutual understanding of willingness to reorganize medicine on a higher and uniform basis. This reorganization should be directed toward making such laws in this country as will regulate the granting and revoking of charters to medical schools, subject to the approval of our national and state medical associations and societies; to meet and stimulate only healthy demand of such institutions of a uniform and high character, allowing only one medical school at any one place and only a necessary number in any one state. Also to regulate preliminary requirements and our state board of examination and registration, so that there can be only efficient and fair admission into the ranks of medicine without discriminations. Quality commands respect; quantity does not. In this country medicine was organized by private hands, all of whom had an ulterior ax to grind. This has brought an unhealthy state of things medical. There have been too many men in the medical college business; not for the good at large, but for the mistaken good of themselves. This is to be regretted. It has demoralized medicine and held back its advancement. We need to heed our errors and look for better things. The way things stand, medicine is not an inviting field of labor, to win bread. We need honest medicine, and relegate the theme of bluff and bluster. Let us have better things.

Yours for better things,

Chicago. ROBERT PETER, M.D.

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